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AIR FORCE MATERIEL COMMAND

AFMC INSTRUCTION 33-104

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Communications and Information

ENGINEERING INSTALLATION (EI) PROCEDURES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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OPR: 738 EIS/DOO (MSgt Michael E. Bowers) Certified by: 738 EIS/DOO (Mr. Harold E. Smith)
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This Instruction implements Air Force Policy Directive (AFPD) 33-1, Command, Control, Communications, and Computer (C4) Systems, and is linked to AFI 33-104, *Base level Planning and Implementation*, for the purpose of managing C4 projects performed by Air Force organic resources assigned to active duty and Air National Guard (ANG) Engineering Installation (EI) units. It establishes EI policies and procedures and provides guidelines for active duty support of Air Reserve Component forces, specialized engineering, training of installers and team chiefs, and engineering, installing, and evaluating communications-electronics projects. The instruction is composed of seven related chapters, each addressing a specific area or function. This publication applies to ANG EI units.

SUMMARY OF REVISION

This revision encompasses numerous grammatical corrections, reference changes, and update of several AFMC forms. It establishes instructions for submitting e-mail correspondence, quality assurance augmentation, and project status reporting. It eliminates quality assurance representatives and 38 EIW warehouse minimum cut length specification codes. This revision also implements the following AFMCI Forms for use by the EI community: AFMC Form 159, **Installation/Acceptance Testing T-2**; AFMC Form 162, **Narrative**; AFMC Form 163, **Record of Corrective Action**; AFMC Form 164, **Fiber Optic End-to-End Attenuation Test**; AFMC Form 165, **Consolidated Utility Cut/Damage Report**; and AFMC Form 166, **Project Status Report**.

Chapter 1

ACTIVE DUTY SUPPORT FOR AIR NATIONAL GUARD EI UNITS

1.1. Types of Support.

1.1.1. The active duty component will advise and assist ANG EI units in all operational support functions to include training, information management, safety, security, and readiness.

1.1.2. On an as needed basis, the active duty component will also provide training and assistance in installation policy and procedures, materiel control, project engineering, program management, and quality control.

1.1.3. Support will be rendered to overcome known or perceived deficiencies or in preparation for OCIs, ORIs, and other types of evaluations.

1.2. Active Duty EI Unit Responsibilities. The active duty EI component will establish and maintain an internal structure to provide assistance and support to ANG EI units as follows:

1.2.1. Appoint an ANG liaison officer/NCO who will serve as the focal point to interface with ANG units.

1.2.2. Identify and train active duty individuals in key support positions so they may provide the depth and degree of assistance needed by ANG units. Disseminate a roster of support focal points to all ANG units.

1.2.3. To the maximum extent possible, make active duty unit resources available to ANG units for training at deployed locations, at ANG units, or active duty home station.

1.2.4. Based upon known support requirements, budget for travel and per diem to assist and advise ANG units at their home station or at exercise locations.

1.2.5. Disseminate pertinent safety, security, and training information to ANG units and provide telephonic/E-mail assistance as needed.

1.3. ANG EI Unit Responsibilities. ANG units will maintain close liaison with the active duty EI unit to identify support and assistance needs as follows.

1.3.1. Identify a focal point to interface with the active duty EI unit.

1.3.2. Provide current unit staff directories and UTA schedules to the active duty component ANG liaison officer/NCO.

1.3.3. Annually project anticipated support needs for the upcoming calendar year.

1.3.4. Provide as much lead time as possible when requesting unplanned or previously unknown support needs.

1.3.5. Involve to the extent possible the active duty component in ANG EI exercises and other joint training environments.

1.4. Procedures.

1.4.1. Prior to the end of the fiscal year, ANG units forward assistance requests via E-mail for the coming fiscal year to the active duty unit ANG liaison officer/NCO who will compile support requests and devise a tentative visit schedule. The liaison officer/NCO will coordinate with units to finalize a visit schedule suitable to all. The visit schedule will be sent via E-mail to all units to be visited with info copy to ANGB/SCX.

1.4.2. Unscheduled requests for assistance will be evaluated to determine urgency and if they should displace projected visits to others unit or if the requests can be accommodated without planned visit interference. Schedule conflicts will be sent to the affected ANG unit commanders and ANGB/SCX for resolution and prioritization.

1.4.3. If funding and the availability of skilled personnel limit active duty component ability to meet all requested support demands, the limiting factors will be identified to the affected ANG unit commanders and ANGB/SCX for resolution and support visit prioritization.

1.4.4. Upon return to home station, the active duty support team chief will complete a short trip report documenting subject areas where assistance was provided and the ANG unit OPRs. Trip report will serve as an audit trail. Copies will be forwarded to the ANG unit visited and the active duty ANG liaison officer/NCO. Any necessary after actions will be coordinated by the active duty liaison officer/NCO and ANG unit focal point.

Chapter 2

SPECIALIZED ENGINEERING SERVICES

2.1. Policy. The 738 EIS/EEE provides specialized engineering services to base-level units and major commands responsible for the engineering, operation, or maintenance of Air Force communications-computer facilities and systems.

2.1.1. Specialized Engineering Scope. Services include investigation and resolution of radio frequency interference and hazard issues, evaluation and resolution of defense information infrastructure and command and control problems, and measurement of the technical ability of Air Force systems to operate in an environment of nuclear electromagnetic pulse and scintillation.

2.1.2. Specialized Engineering Limitations. Services are provided only in the areas of assigned general responsibilities and when specialized engineering skills and capabilities are required and available. This specialized engineering support is not to be used for workload that is more appropriate for maintenance organizations, project engineering activities, contractors, or other activities. There may be cases where unusual circumstances warrant a temporary deviation from this policy. In these cases, all available options should be considered carefully before committing 738 EIS/EEE resources.

2.1.3. Determining Specialized Engineering Applicability. Notify 738 EIS/DOO as soon as possible of any specialized engineering services that may be required. This will allow the maximum time for scheduling and obtaining necessary instrumentation, personnel, training, theater clearances, travel reservations, cost estimates, funding, etc. Programming or other planning documents that commit 738 EIS/EEE resources will not be published prior to appropriate coordination with the 738 EIS/DOO/EEE.

2.1.4. Obtaining Services. Send requests for specialized engineering services directly to 738 EIS/EEE. Funding will be accomplished in the same manner with the exception of those programs centrally funded through the 38 EIG or applicable System Program Office SPO.

2.2. Responsibilities. The 738 EIS/EEE will:

2.2.1. Review each request to ensure only valid requirements are supported and only appropriate workload is accepted. Coordination may be necessary with other activities to validate, reject, or modify requested support.

2.2.2. Maintain a staff of qualified personnel, an inventory of instrumentation, and the mission-essential, special-purpose motor vehicles to support specialized engineering services. The general areas of specialized engineering services shall include but not be limited to:

2.2.2.1. System acceptance testing of Command, Control, and Communications facilities.

2.2.2.2. Verification of high altitude electromagnetic pulse (HEMP) protection.

2.2.2.3. RF shielding effectiveness.

2.2.2.4. Engineering resolution of Defense Information Infrastructure and other communications and telecommunications problems.

2.2.2.5. AC power, grounding, and lightning protection surveys.

2.2.2.6. RF interference resolution.

2.2.2.7. Electromagnetic compatibility and RF radiation hazard studies and surveys.

2.2.2.8. Wide and local area networking systems testing.

2.2.3. Provide support in new areas of Command, Control, and Communications technology as required by Air Force or DOD customers.

2.2.4. Provide trained engineering personnel to support specialized engineering services.

2.2.5. Provide consultative assistance in the general areas of specialized engineering services.

2.2.6. Provide reach back consult support for active duty and Air National Guard Engineering Installations units.

2.2.7. Lease required instrumentation in those cases when it is more cost effective and Air Force instrumentation is unavailable. (Established Air Force supply procedures will be followed for all equipment leases.)

2.2.8. Establish, equip, and maintain fixed support facilities for equipment, training, fabrication, and other purposes directly related to assigned specialized engineering services workload.

2.2.9. Establish a program to implement new engineering technology and to evaluate state-of-the-art instrumentation. These capabilities will also be utilized in the training of special engineering personnel.

Chapter 3

LIGHTNING FORCE ORIENTATION AND INSTALLATION PRACTICE (LFOIP) PROGRAM

3.1. Introduction.

3.1.1. Electronics and wire installation personnel must be skilled in the installation of Communication and Information (C4) systems. Air Force specialty technical training courses provide general information about C4 installation but do not develop or refine the expertise for the professional installation of C4 equipment. The LFOIP program is designed to develop the technician's level of knowledge and skill needed to support the EI mission. The LFOIP program accomplishes this by teaching seven phases of instruction which include classroom instruction and practical application as follows:

3.1.2. Phase 1, Lightning Force Orientation: Combat skills, and installation under wartime conditions.

3.1.3. Phase 2, General Information: Special safety considerations, technical orders, and project package familiarization.

3.1.4. Phase 3, Antenna: Technical order standards for installing and testing antenna systems and support equipment.

3.1.5. Phase 4, Cable Splicing: Technical order standards and manufacturer's specifications for installing, splicing, terminating, testing, and troubleshooting communication-computer cables and equipment.

3.1.6. Phase 5, Electronics: Provides Technical order standards for installing, testing, and troubleshooting electronic equipment.

3.1.7. Phase 6, Fiber Optics: Fiber optic cable installation, splicing, terminating, testing, and troubleshooting.

3.1.8. Phase 7, Local Area Networks (LAN): Provides training on LAN topologies, protocols, distribution systems, and category five cable installation, testing, and troubleshooting.

3.2. LFOIP Project Manager/Production Controller Responsibilities (211 EIS).

3.2.1. Disseminate policies and procedures governing the LFOIP program.

3.2.2. Serve as OPR for this chapter.

3.2.3. Review and approve recommended changes to the LFOIP program, including course curricula.

3.2.4. Provide LFOIP course schedules and allotments to all EI units.

3.2.5. Establish an adequate training facility capable of supporting courses of instruction for electronics, antenna, cable splicing, fiber optics, LAN, and other installation training required by installation teams. The facility will have sufficient space to provide training laboratories for the courses.

3.2.6. Ensure required test equipment and tools necessary for the unit LFOIP program are available.

3.2.7. At the direction of the unit's Installation Flight Officer/ OIC Installation Branch, develop lesson plans on specific tasks or new/unique test equipment.

3.2.8. Budget for and purchase materiel required needed for LFOIP classes conducted at the training facility.

3.3. Unit Installation Flight Officer/OIC Installations Branch Responsibilities.

3.3.1. Ensure each installer successfully completes LFOIP as soon as possible after assignment but not later than 6 months (Active Duty) and 12 months (ANG). Students should be a combination of installers and special category personnel, such as installations flight officers, engineers, or other personnel who do not have hands-on involvement in installations.

3.3.2. Conduct an informal in-station interview at least annually with each work center supervisor and a representative number of team chiefs to evaluate the effectiveness of the LFOIP program.

3.3.3. Provide team chiefs and technicians with up-to-date information on new techniques and test equipment.

3.3.4. Appoint a minimum of one full-time liaison for LFOIP issues who will be available during normal duty hours to function as a contact point for the LFOIP PM.

3.3.5. Notify the LFOIP PM by letter or electronic means of the grade, name, AFSC, and duty telephone number of personnel selected as the unit LFOIP liaison.

3.4. Full time LFOIP Liaison Responsibilities.

3.4.1. Request and fill LFOIP course quotas through the LFOIP PM.

3.4.2. Budget for and purchase LFOIP materiel required for LFOIP recurring training.

3.5. Work Center/Section Supervisor Responsibilities.

3.5.1. Inform LFOIP Liaison of yearly requirements for formal LFOIP quotas.

3.5.2. Ensure all installation personnel have a three-skill level prior to attending a formal LFOIP course.

3.5.3. Record training for active duty and ANG personnel in Section IV of AF Form 623, **On-the-Job-Training Record (or CAMS)** and training for civilian employees on AF Form 971, Supervisor's Employee Brief.

3.6. LFOIP Course Class Procedures.

3.6.1. Academic curriculum is in accordance with the criteria established by the LFOIP PM. The minimum academic hours allotted to the presentation of the EI LFOIP standard course curricula for cable, antenna, and electronics systems is 60 hours. All students must complete Phase 1 and 2 and the appropriate course for their skill area. For example, antenna installers must complete Phases 1, 2, and 3; cable splicing installers must complete Phases 1, 2, and 4; and electronics installers must complete Phases 1, 2, and 5. All classes will have a minimum of four students and a maximum of eight students. The unit PM may increase the maximum number if the facility permits.

3.6.2. Some installers will attend more than one LFOIP class; therefore, they need to complete Phase 1 only once. Once selected to attend a second LFOIP course, the student must report to class at the start of Phase 2 on the third day. This will eliminate duplication of training.

3.6.3. A mid course and a final test will be administered with a minimum of 50 total questions. The total is not to exceed 100 questions.

3.6.4. A minimum end-of-course test score of 70 percent and satisfactory completion of the practical exercises is required.

3.6.5. Awards. Two awards are to be presented: the Honor Graduate Award (HGA) and the Safety Award. Repeat students are not eligible for the HGA. The unit PM will develop a scoring system to determine the HGA recipient using End-of-block quizzes and a point system for grading practical exercises.

3.6.5.1. Honor Graduate Award. The PM will determine the HGA. The HGA must have a minimum score of 90 percent.

3.6.5.2. Safety Award. The PM, with the help of the instructor staff, will develop the criteria for the safety award.

3.6.6. Documentation of Training: LFOIP PM will:

3.6.6.1. Present students who successfully complete a LFOIP program course an AF Form 1256, **Certificate of Training** and record subjects taught on the back of the form.

3.6.6.2. Maintain a class roster of students who attended formal LFOIP courses. Class rosters should be kept on file for 4 years.

3.7. Evaluations. The effectiveness of the LFOIP program will be evaluated using local procedures established by the local LFOIP/ PM, i.e., using student critiques, customer feedback, and workshops.

Chapter 4

EI TEAM CHIEF DEVELOPMENT PROGRAM

4.1. Responsibilities.

4.1.1. Installations Officer/Installations Flight Chief:

4.1.1.1. Approve requests to enter people into program, ensure they possess the necessary administrative, supervisory, managerial, and technical skills. More importantly, the nominee must demonstrate the outstanding leadership and professionalism demanded of EI team chiefs.

4.1.1.2. Reviews member's personnel record, training record, and conducts a personal interview, to include filling out an AFMC Form 148, **Team Chief Fitness Evaluation** (Attachment 2) on the individual, before approving or disapproving a nominee's entry into the team chief development program. Note: No nominee may have an unsatisfactory in any area of the performance and must also have an excellence in all areas on Conduct and Behavior category.

4.1.1.3. Reviews a team chief nominee's Quality Assurance (QA) evaluation and performance, and the section's chief's recommendation before either approving or disapproving the nominee's team chief certification.

4.1.1.4. Decides either to retain or remove a team chief from the team chief development program based on the individual's annual performance feedback, or if disapproved for certification, as in the case of a poor QA evaluation.

4.1.2. Installations Superintendent/Branch Chief (if none assigned, section supervisors accomplish):

4.1.2.1. Nominate personnel possessing outstanding administrative, managerial, technical, and leadership skills for entry into the team chief development program.

4.1.2.2. Request certification evaluation from QA for team chiefs who have completed all aspects of team chief training and are completing their certification evaluation project. Certification Evaluations can be done in phases over several projects in order to meet a evaluation criteria.

4.1.2.3. Initiate personnel action to assign the duty title of "EI Team Chief Nominee" or "EI Team Chief" to selected personnel after approval of the Installation Officer.

4.1.2.4. When an individual has performed satisfactorily as a team chief and has been evaluated by QA and certified by the responsible supervisor, initiate classification action requesting award of the Special Experience Identifier (SEI) Code 200.

4.1.2.5. Develop team chief and team chief nominee lists to track the status of personnel in the team chief development program.

4.1.2.6. Insure training records (AF Form 623 or equivalent JPG) are maintained on all team chiefs and team chief nominees, in the grade of TSgt and below. For Master Sergeants and above performing team chief duties recommend team chief task lists (JPGs) be maintained in repsective team chief folders.

4.1.2.7. Give each team chief and team chief nominee their training folders as part of their unit out-processing for permanent change of station.

4.1.2.8. Maintain a file, which contains all documentation of qualifications for each team chief nominee and team chief (see Attachment 3). The Chief of Installations or Section Superintendents may maintain these files. Electronic files are authorized and are considered source documents.

4.1.3. Section Supervisors:

4.1.3.1. Recommend to the Installations Chief, installers to be considered for nomination into the Team Chief Nominee program.

4.1.3.2. Oversee the development of the team chief nominees under the direct supervision of certified team chiefs.

4.1.3.3. When necessary, schedule team chiefs for the EI Team Chief Refresher Seminar through the unit training section.

4.1.4. Unit Training Section.

4.1.4.1. Forward problems encountered in obtaining Lightning Force Academy training quotas to 211 EIS/ISLF and ANGB/SCXX, or host unit training function as applicable.

4.1.4.2. Provide the EI Academy with the name, grade, SSAN, and AFSC of individuals scheduled to attend the team chief course or seminar not later than 2 months prior to scheduled class start date.

4.1.4.3. Brief team chief course attendees on policies and procedures of the EI Academy, including as a minimum uniform and weight standards, training location, phone numbers, class start times, and transportation phone number as outlined in the EI Academy welcome letter.

4.1.5. Chief of Quality Assurance.

4.1.5.1. When requested by the installation's superintendent/branch chief, schedules a team chief certification evaluation.

4.1.5.2. Provides a copy of the QA evaluation to the Installations Officer.

4.1.5.3. Makes recommendations to the Installations Officer or briefs Installation Officer and Installations Superintendent.

4.2. Team Chief Development.

4.2.1. The team chief development program encompasses formal training, on-the-job task training, Quality Assurance (QA) evaluation, supervisory evaluation, and finally certification. The first step is to identify individuals qualified to be assigned the title team chief nominee.

4.2.2. Requirements for Team Chief Nominee Duty Title: Individuals must be serving in the grade of Staff Sergeant or higher, hold, at the minimum, "5" skill level in their assigned AFSC, and meet the following requirements:

4.2.3. Complete Supervisor Safety Training Completion Document IAW AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program*.

4.2.4. Complete AFSC-related LFOIP seminar.

4.2.5. The team chief nominee will be entered into training on team chief tasks identified in Attachment 4.

4.2.6. Formally entered into the Team Chief Nominee program IAW local unit procedures.

4.2.7. Requirements for Team Chief Duty Title: To be assigned the duty title of "EI Team Chief," nominees must be serving in the grade of staff sergeant or higher, awarded a PAFSC "7" skill level in their assigned AFSC and meet the following requirements:

4.2.8. Complete EI Team Chief Course.

4.2.9. Complete Supervisor Safety Training or ECI Course 1900 (Air Force Joint Service Supervisor's Safety Course).

4.2.10. Obtain Hazardous Cargo Certification.

4.2.11. Perform a project and be evaluated by QA and be recommended by the Installations Officer / Installations Flight Chief.

4.2.12. Complete EI Project Engineering Course (highly recommended, not mandatory).

4.2.13. Be certified on all tasks listed in Attachment 4.

4.3. Types of Team Chief Evaluations.

4.3.1. To maintain standards and lend credibility to the team chief development program, team chief evaluations are performed as follows:

4.3.1.1. Initial. Conducted anytime after successful completion of the EI Team Chief Course and other training requirements.

4.3.1.2. Re-certification. Conducted for decertified team chiefs.

4.3.1.3. Special. Conducted to verify the proficiency level of assigned team chiefs. The work-center supervisor, Installations Superintendent, or Installation Officer may request the special evaluation for the following reasons:

4.3.1.3.1. When a certified SEI 200 EI team chief transfers from one EI unit to another (optional).

4.3.1.3.2. If an EI team chief has not served in an EI unit within the last 13 months (mandatory).

4.3.1.3.3. When a EI team chief has not performed team chief duties because of temporary positions, such as LFOIP instructor, workload controller, etc., for 13 months or longer (mandatory).

Chapter 5

PROJECT ENGINEERING

5.1. Project Engineering Process Overview. This chapter describes the project engineering developmental process for EI project packages used to install, remove, relocate, reinstall, and retrofit communications and information systems. Procedures contained within are applicable to all EI units involved in project package construction.

5.1.1. Purpose. This chapter describes the project engineering developmental process for EI project packages used to install, remove, relocate, reinstall, and retrofit communications and information systems. procedures contained within are applicable to all EI units involved in project package construction.

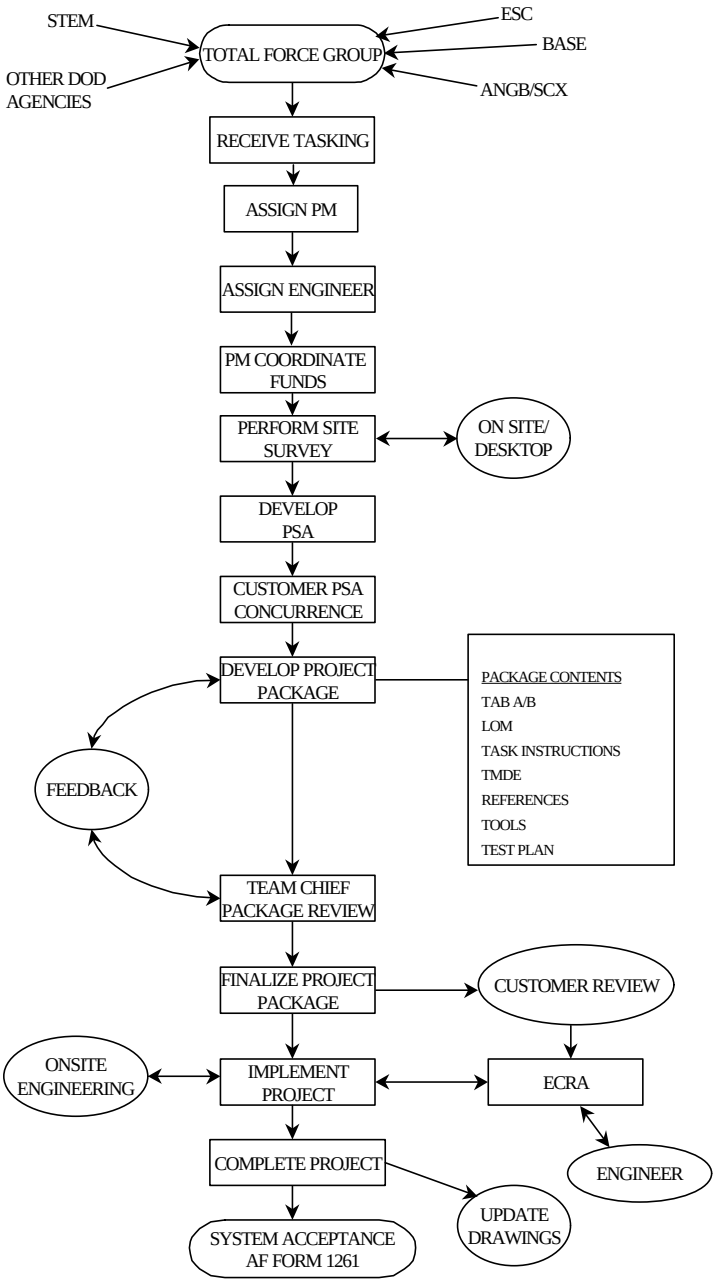
5.1.2. List of Abbreviations and Acronyms: See Attachment 1 of this instruction.

5.1.3. Reference Material: See Attachment 1 of this instruction for a list of reference materials.

5.1.4. Overview: The EI units provide engineering and installation services to meet the Air Force (AF) and other Department of Defense (DOD) wartime and peacetime communication requirements. EI units engineer and implement installation, removal, relocation, and reconstitution of C4 systems. EI units also render other services, such as engineering assessments and emergency maintenance, needed to support the Air Force C4 mission.

5.1.5. The Overall Process. Figure 5-1 shows the major steps involved in the project engineering process. The following paragraphs briefly describe each major step. Several major process steps are discussed in more detail later in this Chapter.

Figure 5.1. Project Engineering Process.



5.1.5.1. Requirements Processing. This section outlines the basic steps in processing customer's C4 requirements.

5.1.5.1.1. Initiation. When a requirement is received by 38 EIG or directly from a customer, it's reviewed to ensure MAJCOM approval, funding availability, and Systems Telecommunications Engineering Manager (STEM) certification prior to inclusion in the Total Force Group Meeting.

5.1.5.1.2. Total Force Group Meeting. Requirements from all MAJCOMs are collected and presented to EI field units. Each unit selects projects that provide the best training environment to prepare EI personnel for wartime taskings. Unselected requirements are either returned to the requester or contracted out by the 38 EIG.

5.1.5.2. Assign Project Manager/Production Controller. Following the Total Force Group meeting, requirements are given project numbers and project manager/production controllers are assigned. As the name implies, PMs manage all phases of each project. They are the central coordination point for all activities, to include obtaining funds, ensuring materiel acquisition, project package distribution, supporting the EI team in the field, monitoring and reporting project status, and performing all administrative functions to finalize and close out projects.

5.1.5.3. Assign Engineer. The EI unit responsible for implementing a project assigns an engineer. Project complexity and availability of personnel resources usually determine whether the project is assigned to a degreed engineer, team chief, or enlisted engineer for project package development. The assigned engineer will proceed with the engineering project actions and keep the PM advised of milestone date changes that may affect the program.

5.1.5.4. Funds Coordination. The assigned engineer will provide the PM with a cost estimate for the required site survey and project package printing. The PM coordinates with the customer as necessary to obtain site survey funding for travel and per diem.

5.1.5.5. Site Survey. The engineer performs either a desktop survey or an on-site survey. The type of survey depends upon the complexity of the project and availability of site information.

5.1.5.6. Project Support Agreement (PSA). Based on site survey information the engineer will develop a PSA (or, as discussed later, a Statement of Intent). The PSA is basically a contract between EI and the customer. It details allied support requirements, equipment needs and location, environmental requirements, communications circuits, and any other items relevant to host-base actions necessary to implement and successfully complete the project.

5.1.5.7. Customer PSA Concurrence. Upon completion of an on-site survey, the goal is to leave the PSA on site with the designated Communications Systems Officer (CSO) and obtain concurrence prior to departure. If this cannot be achieved, within 30 days of the engineer's conclusion of the survey, a copy of the PSA should be sent to the CSO Plans and Implementation (P&I) function who is responsible to distribute copies and all other affected base activities. Within 30 days the customer CSO P&I should return the PSA concurrence to the EI PM for further project implementation.

5.1.5.8. Develop Project Package. Normally, the assigned engineer begins project package development as soon as the site survey is complete. Project package content depth and detail is directly related to project complexity that contains a List of Materiel (LOM), installation or removal instructions, testing instructions, drawings, and any other information applicable to the project action.

5.1.5.9. Team Chief Package Review. The completed project package is submitted to a team chief who conducts a thorough review for completeness and technical accuracy. The team chief identifies discrepancies to the engineer along with recommended corrective actions. The team chief and engineer work together until the package is suitable to both parties.

5.1.5.10. Finalize Project Package. Once the project package is finalized, the engineer provides the PM with the sufficient number of copies (hard copies or electronic) of the package for distribution to appropriate parties. The customer is also afforded the opportunity to review the project package and coordinate any changes.

5.1.5.11. Implement Project. When the materiel and equipment items are on site, allied support is complete, and the customer indicates they are ready, the PM will coordinate the deployment of an installation team to accomplish the installation.

5.1.5.12. Engineering Change Request/ Authorization (ECRA). Prior to and during project implementation, the team chief or customer may recommend changes to the package by forwarding an ECRA to the appropriate engineering activity. The engineer will work with the team chief or customer as necessary to implement the change or otherwise achieve agreement.

5.1.5.13. Project Completion. After the installation is complete and tested, the team chief updates and forwards Communications Systems Installations Records (CSIR) drawings to the agency responsible for maintenance and provides the customer with a copy. The team chief also consults with the customer for disposition of excess materiel.

5.1.5.14. System Acceptance. When the installation is completed and accepted, as indicated by all involved parties signatures annotated on the AF From 1261, Acceptance Certificate, the project will be closed out by PM. Occasionally, there may be exceptions indicated on the AF Form 1261. Projects can still be closed out or may remain open pending rectification of exceptions.

5.2. Site Survey and Project Support Agreement.

5.2.1. General: This section outlines the steps necessary in planning, conducting, and documenting site surveys to satisfy customer's requirements. Assigned Systems Telecommunications Engineering Managers (STEMs) are responsible to help customers define their needs, evaluate needs against the base blueprints, document needs as requirements, obtain technical solutions and cost estimates, project needs into the Program Objectives Memorandum (POM) budget to obtain funding, and schedule engineering and installation support via the annual TFG Meeting.

5.2.2. Site Surveys: Site surveys are conducted to obtain information for Communications Systems Requirements documents (CSRD), C4 project guidance, timelines, and for project planning. The two types of EI surveys are desktop and on site.

5.2.2.1. Desktop surveys can be used for uncomplicated installations and removals. By using record drawings, available data, and telephone coordination, the engineer obtains the technical information needed for the PSA and project package.

5.2.2.2. On-site surveys are performed when task complexity is high or when there is inadequate reference data to use in PSA for the installation, removal, or relocation of C4 system equipment.

5.2.2.3. When an on-site survey is required, the engineer provides the PM with TDY travel cost and projects package reproduction cost estimates. The PM coordinates with the customer to obtain funding necessary to meet all associated costs.

5.2.3. Survey Planning: Survey preparation for on-site surveys normally include a thorough study of the operational requirements, EMC, EMRH, environmental characteristics, siting criteria, connection approval (CA) requirements (Attachment 5), existing facilities, any related project action, and support requirements.

5.2.3.1. The engineer will formally notify the base office of primary responsibility, usually the communications unit Plans and Implementation (P&I) office, of the planned site-survey date as far in advance as possible. Notification letters or E-mail includes the appropriate MAJCOM, host base P&I, STEM-B, and host base CE. Information copies should be sent to any other affected activities such as: security police, Federal Aviation Administration (FAA), AF regional civil engineer and MAJCOM TEMPEST officer. Engineers must also ensure host base CSO P&I is notified (in the letter or message) to inform any other interested parties of the details of the site-survey.

5.2.3.2. Notifications will consist of the following:

5.2.3.2.1. Project number, title, and purpose of the on-site survey.

5.2.3.2.2. Survey dates established through coordination with the host command.

5.2.3.2.3. Survey team personnel (name, rank, and security clearance).

5.2.3.2.4. Any peculiar site survey supports requirement that is characteristic of a particular project. Examples may include access to certain equipment or locations, or any unusual safety concerns while conducting the survey.

5.2.4. On-Site Survey Action: Upon arrival at the site location personnel will contact the CSO P&I to set up a meeting with appropriate base personnel. At the meeting the engineer will present a concise briefing on the purpose and agenda of the survey, scope of the project effort, and the support needed during the survey.

5.2.4.1. The survey normally consists of siting the facility, determining the location for C4 system equipment, establishing support requirements, evaluating EMC/EMRH impact, addressing TEMPEST considerations, and recording engineering data.

5.2.4.2. The engineer determines equipment location based on compatibility, future growth, use of existing construction, air space clearance, electromagnetic environment, and the environmental impact. In selecting a location for equipment, the engineer considers established siting criteria, space availability, the equipotential ground system per latest issue of MIL STD 188-124C, planned or programmed utilization of space, and arrangement of equipment. The engineer must obtain sufficient data to adequately examine potential EMC/EMRH problems. When necessary, the engineer verifies equipment layout with the appropriate work center (O&M) personnel and select the most efficient implementation methods to minimize or preclude operation downtime. **Note***:* Review paragraph 5.6., Special Engineering Considerations and Requirements, of this chapter before and during the site survey to ensure all facets of the project are properly surveyed and applicable information and guidance is included in the PSA and project package.

5.2.4.3. The final choice of a site for a proposed C4 facility may require a compromise based on the base civil engineer environmental responsibility, economics, operational needs, security requirements, EMC, EMRH, and survivability. Electronic equipment may be properly sited only after careful consideration of all these factors.

5.2.4.4. The Engineer annotates existing record drawings (CSIRs) with the new survey data and ensure those updated records are included in the PSA and the project package. Sketches may be used in the PSA if insufficient time exists to process the record drawings for use with the PSA.

5.2.4.5. If adequate site drawings do not exist, the surveying engineer is responsible to develop new ones.

5.2.4.6. If applicable, TEMPEST precautions must be addressed when surveying for the installation of equipment used to process classified material.

5.2.5. Survey Conclusion: During the survey and upon its conclusion the engineer develops the PSA. Accurate documentation of site survey findings, clear and concise sketches and diagrams, and properly annotated drawings are key to composing an encompassing PSA and developing a good, useable project package. For projects limited in scope, the project engineer may determine a PSA is not appropriate to document site survey results. In such cases, instead of a PSA, a Letter of Intent (LOI) may be prepared (see Attachment 43 for a sample LOI). The LOI serves the same purpose as a PSA but on a reduced scale. It may identify host-base allied support requirements as well as other project requirements normally contained in a PSA. Customer LOI concurrence must be obtained before departing the host base.

5.2.6. Project Support Agreement (PSA): The PSA (Attachment 6) is a formal contract between the customer and the engineering entity (738 EIS engineering, ANG engineering, or contractor). It outlines project information, specific engineering actions (equipment, siting, and installation and/or removal data), and the customer support requirements.

5.2.6.1. The engineer will attempt to prepare an on-site PSA prior to departing the Temporary Duty (TDY) location. The ability to prepare the PSA and have it coordinated prior to departure is based on the complexity of the project, time constraints, and if proper engineering support is readily available. The on-site PSA will be coordinated with and signatures obtained from the Support Group commander or designated representative, the CSO, P&I, and representatives from all organizations affected by the project (maintenance, installation support, BCE, etc.).

5.2.6.2. If unable to leave a PSA on site, the engineer prepares a Statement of Intent (SOI) and leaves it with the customer. The SOI (Attachment 11) briefly describes project requirements, tentative solution and support agreements, and an estimated time which the customer can expect the PSA. The SOI serves as a preliminary coordination document that identifies equipment and facility reservations and support requirements.

5.2.6.3. The engineer establishes and informs the customer of the Project Support Agreement Return (PSAR) date which is normally 30 days following PSA publication.

5.2.6.4. The engineer also makes a distribution and addressee list that consists of the PM and STEM-B, customer P&I, host base functions responsible for project actions (i.e., BCE, base supply, etc.), and the requiring MAJCOM.

5.2.6.5. The engineer must include a statement in the PSA (see Attachment 6, paragraph 8) that TEMPEST considerations will or will not be required.

5.2.6.6. The engineer is responsible to annotate standard record drawings with the new survey data and ensuring updated drawings are used with the PSA and project package. Sketches may be used if insufficient time exists to process standard drawing for use in the PSA. Sketches will list and reference standard drawings from which they were derived. Drawings or sketches included in the PSA must be legible and ready for base processing.

5.2.6.7. When applicable, the PSA should include a statement to inform the customer of their responsibility to fund for XD and XF Depot Level Repairable (DLR) items required to complete test and acceptance actions for upward generated projects.

5.2.6.8. When the engineer returns to home duty station, distribution of the on-site PSA is made after appropriate drawing changes are updated with the survey findings. If an SOI was prepared on-site, a copy is provided to the PM and included as an attachment to the subsequent PSA. When removal actions are required, the CSO P&I will be tasked to obtain disposition instructions from the appropriate item manager for all removed equipment items.

5.2.7. PSA Format: All project and project support data will be assembled and written into a PSA format as shown in Attachment 8 and as follows:

5.2.7.1. PSA Administrative Portion Package - Describes the project information, PSA content, host base support requirements, implementation schedule dates, and the PSA processing data.

5.2.7.2. PSA Attachment 1 (Attachment 7) - Siting and Project Installation description and special instructions.

5.2.7.3. PSA Attachment 2 (Attachment 8) - This attachment contains the civil engineering support requirements.

5.2.7.4. PSA Attachment 3 (Attachment 9) - The C4 systems support requirements.

5.2.7.5. PSA Attachment 4 (Attachment 10) - Contains the drawing list.

5.2.7.6. The PSA report will be signed by the engineer’s section chief.

5.2.8. Customer PSA Concurrence. Projects cannot be implemented without customer concurrence. Frequently, concurrence is not received within the desired 30-day time frame. The engineer notifies the PM who is responsible to coordinate with the customer to resolve delay problems, if concurrence is not received in a timely fashion.

5.3. Project Package Development and Format. A standard project packages consist of a List of Materiel (LOM), installation or removal instructions, testing instructions, drawings, and any other information applicable to the project action. The package is divided into two sections: Tab A and Tab B.

5.3.1. Tab A: Tab A consists of an AFMC Form 149, **C4 Systems Project Cover Sheet** (Attachment 12) and the List of Materiel (LOM).

5.3.1.1. The required information for a Cover Sheet is as follows:

5.3.1.1.1. Project Designator: consists of the four-element project designator.

5.3.1.1.2. Date of Issue: leave date blank, to be dated later by reproduction or distribution activity.

5.3.1.1.3. Project Title and Location: enter special project name if applicable, project title, base or station name, and geographical location.

5.3.1.1.4. Project Manager/Production Controller Organization: Functional Address Symbol, Name, and DSN.

5.3.1.1.5. Engineer's Organization: Functional Address Symbol, Name, DSN, and Signature.

5.3.1.1.6. Releasing Engineer, Project Engineer's Supervisor or above. Enter the organization, functional address symbol of releasing engineer, DSN number, and signature. Engineering activity approval is required prior to release of a project package without a PSA

endorsement. When a PSA is required, annotate in "Comments and Distribution" the estimated date the PSA endorsement will be distributed.

5.3.1.1.7. Functional Description: enter a brief functional description of the services or facility to be provided by this project.

5.3.1.1.8. Unusual Shipping and Marking Instructions: as applicable. Indicate "No special shipping or marking instructions required" if not applicable.

5.3.1.1.9. Associated Project: identify project numbers that support or are supported by this project with the estimated team completion date of the project. Briefly describe the relationship of the support. Leave blank if not applicable.

5.3.1.1.10. Comments and Distribution: enter information important to the project recipients. Example: If a PSA was not required and not published, state so in this block. Project package distribution will show addressees as determined during the on-site survey.

5.3.1.1.11. The following statements must be marked on the cover sheet section as required by AFI 61-204:

5.3.1.1.11.1. Distribution Statement C. Distribution authorized to US Government agencies and their contractors for Administrative or operational use, 1 May 1986. Other requests for this document shall be referred to the originator.

5.3.1.1.11.2. "DESTRUCTION NOTICE - Destroy by any method that will prevent disclosure of contents or reconstruction of the document".

5.3.1.1.11.3. Export Control Notice. If space is available it should read "WARNING - This document contains technical data whose export is restricted by Arms Export Control Act (Title 22, U.S.C. 2751 et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S., App. 2401, et seq. Violation of these export-control laws is subject to severe criminal penalties. Dissemination of this document is controlled under DoD Directive 5230.25". If space is limited may be replaced with " WARNING - Export Controlled".

5.3.1.2. List of Materiel (LOM): A LOM will be developed to provide the information required for acquisition of project materiels.

5.3.1.2.1. The LOM consists of two sections. Section 1 lists end items and equipment required for the project. This may include CA/CRL equipment, Depot Level Repairable equipment, etc. Section 2 consists of supplies and expendable items required for the installation. This may include cables, connectors, etc. Section 1 will be provided to the customer for acquisition. Section 2 will be provided to General Services Administration (GSA), or to the customer, for acquisition.

5.3.1.2.2. Section 1 of the LOM is organized into a spreadsheet to include the following information: Item Number, Stock Number, Description, Unit Of Issue, Total Required, Unit Cost, Extended Cost, and Remarks. An example of LOM Section 1 is located at Attachment 13.

5.3.1.2.3. Section 2 of the LOM is organized into a spreadsheet to include the following information: Item Number, Description, Manufacturer, Part Number, Unit of Issue, Quantity, Unit Price, Extended Cost, Remarks and SRL/MCL. Vendor Information, GSA contract number (if

applicable), Ordering Official, Delivery point including Point of Contact information. A sample LOM Section 2 is located at Attachment 14.

5.3.1.2.4. Be sure to identify minimum cut lengths (MCL) of cable needed for each project. Failure to do so could drive up installation costs caused by cable teams having to install splice cases and splice cable. Check with the vendor or GSA to determine if there are any special methods of identifying MCLs. If necessary, include remarks at the bottom of the LOM specifying MCLs.

5.3.1.2.5. The following items will not be included as part of a normal LOM:

5.3.1.2.5.1. All test or support equipment authorized in Allowance Standard (AS) 713. Special contracts may require tools or maintenance spares be included as part of a project installation. Materials normally supplied and installed by the base civil engineering as part of a building.

5.3.1.2.5.2. Towers, telephone poles, shelters, etc., are real property and should be identified in section 1 of the LOM. This will assist team chief in determining the requirement for the preparation of a DD Form 1354, **Transfer And Acceptance Of Military Real Property**.

5.3.1.2.5.3. Towers or hardware required to be embedded in concrete as part of the base construction effort will be listed on the LOM section 1. Material which requires installation by BCE prior to installation team arrival should be noted in the remarks section.

5.3.1.2.5.4. The preferred method of referring to LOM materiel in the project packages will be by manufacturer's part number or National Stock Number (NSN).

5.3.1.2.6. Materiel Substitution. All materiel substitutions must be approved by the project engineer. Materiel substitutions may be requested by the team chief, customer or GSA. The substitution request should be sent directly to the project engineer with info copy to the Project Manager/Production Controller. If necessary, the Project Manager/Production Controller will assist in the resolution of materiel substitution problems.

5.3.2. Tab B Preparation: Tab B consists of the installation description, task instructions with associated lists, and attachments. Tab B must be prepared in sufficient detail to permit the installation of the project without further clarification. See Attachments 15 through 21 for Tab B format.

5.3.2.1. Task Instructions. Task lists should include installation references, technical orders, manuals, and drawings for each task performed.

5.3.2.1.1. Guidelines for special tools and test equipment are provided in Tab B, Table 3, (Attachment 20). This test equipment does not appear in AS-713, but is required to perform specific tests, and will be obtained by EI units via submittal of an AF Form 601, **Equipment Action Request,** to authorize the item, or if authorized, provisions must be made to acquire necessary items via rental or lease agreement. The information will be in the form of detailed instructions with specific reference to applicable EI standards, Technical Orders, manuals, test procedures, drawings, and commercial documents.

5.3.2.1.2. Do not repeat administrative, procedural guidance, or directions contained in any other documents that regulate installation teams.

5.3.2.1.3. Tasks established in the technical information are binding but the method of accomplishment is under the control of the installer. In unique situations when standard methods cannot be accomplished, technical information will contain a preferred technique as an assistance to the installer. This is only an advisory and the installer may substitute methods for which he has assets and capability.

5.3.2.1.4. References in the tasking section to technical data will identify the specific portion of a manual or drawing that applies. Technical data referenced in the project package such as commercial off-the-shelf manuals, company installation practices, catalogs, and brochures not available through government sources will be made available to the installer.

5.3.2.1.5. Any unusual precautions or circumstances such as safety hazards as related to a specific installation or location should be identified. Reference Attachment 16, paragraph A16.2.

5.3.2.2. Special Project Packages.

5.3.2.2.1. Abbreviated Project Package. The engineering activity may prepare an abbreviated project package when a full package is not necessary; such as for standard non-complex installations, removals, or re-locations. There should be sufficient information available in technical orders, manuals, and drawings, thus not requiring additional task instructions. Reference Attachment 22 for example of an Abbreviated Tab B.

5.3.2.2.2. The engineer is responsible for all engineering consideration for projects with abbreviated packages as well as for complete project packages. When there is no PSA, the appropriate statements will be included in abbreviated project packages relative to the predicted existence or non existence of EMC and EMRH, adequacy of existing grounds, adequacy of telephone circuits, and EMP requirements. PSA preparation may be omitted for abbreviated projects by agreement between the PM, customer and engineer.

5.3.2.2.3. Basic project package content for Antenna, Cable, and Radio, Wideband, and Crypto projects is as follows:

5.3.2.2.3.1. Antenna.

5.3.2.2.3.1.1. Cover Letter providing much the same info as current C4 Systems Project Cover Sheet.

5.3.2.2.3.1.2. LOM.

5.3.2.2.3.1.3. Details the engineer feels are needed to clarify complicated installations. Standard drawings depicting antenna assembly. Large items, i.e. equipment that has its own support structure such as HWRLPs and radomes are done almost exclusively using TOs so drawings are not needed.

5.3.2.2.3.1.4. Base layout drawings depicting antenna/tower location, if appropriate.

5.3.2.2.3.1.5. Any sketches the engineer feels will clarify the objective. Sketches are particularly useful for depicting cable runs between antennas and radios.

5.3.2.2.3.1.6. PSA with endorsements.

5.3.2.2.3.1.7. Note this format eliminates the table of contents; installation description; special instructions; drawing, pubs, special tools and test equipment, and task lists; and task instructions.

5.3.2.2.3.1.8. Modified antenna installations may need a few instructions to tell the TC how to modify the antenna. Notes on a standard drawing are usually sufficient.

5.3.2.2.3.1.9. Removals need only identify the items that are to be recovered and disposition instructions, remaining items will be turned into DRMO. LOM is currently included but is not needed.

5.3.2.2.3.1.10. Relocations have the same requirements as installations.

5.3.2.2.3.2. Cable.

5.3.2.2.3.2.1. Cover Letter providing much the same info as current C4 Systems Project Cover Sheet.

5.3.2.2.3.2.2. LOM.

5.3.2.2.3.2.3. Drawing List (Provides a quick reference and check for the team chief.) Drawings will include cable counts and sketches for clarification. Also they will depict manholes, cable runs, and building penetrations.

5.3.2.2.3.2.4. Cable List (Helps to clarify placement of cut lengths and provides a quick reference for the larger jobs.)

5.3.2.2.3.2.5. PSA with endorsements

5.3.2.2.3.2.6. Engineering Notes (For special instructions for unusual circumstances.)

5.3.2.2.3.2.7. Power Budget for fiber optic projects

5.3.2.2.3.2.8. Note this format eliminates the table of contents; installation description; special instructions; pubs, special tools/test equipment, and task lists; task instructions, and conversion tables. TOs need not be listed. Standard drawings need not be included.

5.3.2.2.3.2.9. Removals need only list the cable to be removed, preferably marked on a drawing. Relocations (actually reroutes) have the same requirements as installations

5.3.2.2.3.3. Electronics (radio, secure comm, ATCALS).

5.3.2.2.3.3.1. Cover Letter providing much the same information as current C4 Systems Project Cover Sheet.

5.3.2.2.3.3.2. LOM.

5.3.2.2.3.3.3. List of Publications - The variety of equipment installed by these skills and cross-utilization prevents TCs from being experienced on every type. TOs are heavily relied upon for installation and testing instructions. SIPTOs (rack installation, duct/conduit installation) need not be listed.

5.3.2.2.3.3.4. Task Instructions - Members feel task instructions are needed only when a drawing or TO cannot be referenced. No reference is needed for standard installation tasks such as mounting racks or running conduit/duct. References ARE needed for end items such as radios and crypto. End items often require additional information spelled out in the task instructions such as what dip switch settings, strap options, front panel settings, cable pinouts, etc, should be used. It is insufficient to simply state “Rig item for RS-232 operation.” Engineer should list actions required to configure item.

5.3.2.2.3.3.5. Drawings depicting rack location and any other items that should be part of the permanent record such as frontal elevation drawings. Standard drawings for installation techniques (mounting racks/running duct/etc) need not be included. Standard drawings that provide details on end items (crypto/radio/etc) should be included.

5.3.2.2.3.3.6. Any sketches the engineer feels will clarify the objective. Sketches are particularly useful for depicting specialized work such as panel fabrication. Sketches are destroyed after installation.

5.3.2.2.3.3.7. PSA with endorsements.

5.3.2.2.3.3.8. Note this format eliminates the table of contents, installation description, special instructions, special tools/test equipment list, and task list.

5.3.2.2.3.3.9. Removals need only list the items to be recovered (with disposition instructions). Relocations have the same requirements as installations. In both instances, functional testing roles and responsibilities must be clearly spelled out in the PSA. O&M should perform a functional test with EI assisting. Proper testing and tagging prior to removal eliminates future problems if the item doesn't function correctly.

5.3.2.3. For all project packages, make a note for the team to annotate the project drawings and the communications squadron to file the drawings as CISRs.

5.3.2.4. All standard and as-installed drawings associated with the project will be marked with the following distribution statement as required by AFI-61-204, *Disseminating Scientific and Technical Information*:

5.3.2.4.1. Distribution Statement F. "Further dissemination only as directed by 38 EIG, Tinker AFB OK 73145-2713; August 1995; or higher DoD Authority".

5.3.2.4.2. Destruction Notice. Unclassified drawings will state "DESTRUCTION NOTICE - Destroy by any method that will prevent disclosure of contents or reconstruction of the document". Classified drawings will state "DESTRUCTION NOTICE - Follow the procedures in DoD 5220.22-M, *National Industrial Security Program Operating Manual (NISPOM),* Section 5-705, or DoD 5200.1-R, *Information Security Program Regulation*, Chapter IX".

5.3.2.4.3. Export Control Notice. "WARNING - Export Controlled"

5.3.2.4.4. Tab-A-Only. Use of a Tab-A-Only is appropriate for a number of situations.

5.3.2.4.4.1. Tab-A-Only can be used to provide additional materiels after publication of the basic project and after materiel has already been called out for shipment. Installation instructions for the additional materiel must already be included in the Tab B of the basic project. Make distribution of the Tab-A-Only package to all recipients of the basic project package.

5.3.2.4.4.2. Use Tab-A-Only to provide materiel when conditions require simultaneous on-site engineering and installation. **Note***:* A Tab-A-Only project package includes a C4 Systems Project Cover Sheet and the LOM. Mark "Tab-A-Only" above the project designator on the Cover Sheet. Explain in Comments and Distribution area of the Cover Sheet how installation instructions for the materiel listed on the LOM will be provided, i.e., basic project, on-site engineering, etc.

5.3.2.4.4.3. Use of Tab-A-Only when technical instructions for the simultaneous installation of two or more projects at the same location may be contained in one Tab B. A separate C4 Systems Project Cover Sheet and LOM will be required for each project number. In this case, there would be two project packages. The first would contain a Tab-A-Only for the first package. The second package would list both project numbers on the cover and contain a Tab A for the second project and a common Tab B for both projects.

5.3.2.4.5. Removal Projects. Prepare removal projects as follows:

5.3.2.4.5.1. A LOM will be prepared for removal projects. The LOM should include items such as blank rack panels, materiel needed to terminate remaining circuits, or materiel to close openings left in duct or conduit.

5.3.2.4.5.2. A Tab B should be written for the removal project IAW paragraph 5.3.2. Included in the Tab B will be any special disposition instructions.

5.3.2.4.6. Relocation Projects. Prepare relocation projects as follows:

5.3.2.4.6.1. An on-base relocation project will be implemented IAW Sections 2 and 3 of this chapter. Drawings will be included to show the existing and proposed equipment locations.

5.3.2.4.6.2. Two projects are required (one for removal and one for installation) for equipment that is to be removed and reinstalled at some future date on the same or a different base.

5.4. Project Package Review and Distribution. Once completed by the assigned engineer, project packages should be reviewed internally by the engineering supervisor, an experienced team chief, and the assigned project manager/production controller. Unit QA selectively reviews a sampling of project packages. The customer is also afforded an opportunity to review the package to ensure it meets original concepts. Any reviewer can recommend changes to which the engineer must respond, make valid changes, or otherwise modify and finalize the project package. AFMC Form 163, **Record of Corrective Action,** or plain bond paper may be used to record project package corrective actions. A copy of the corrective actions is returned to the reviewer and a copy is filed in the project package.

5.4.1. Specific review procedures are established in each EI unit. Normally, the project package is sent to the team chief through the project manager/production controller who coordinates a review complete date with the reviewing section chief. The team chief notes all discrepancies on an AFMC Form 150, **Record of EI Project Review** (Attachment 23) and coordinates directly with the engineer to correct deficiencies. If the engineer and reviewer disagree on changes, the project manager/production controller sends the package to unit quality assurance for final resolution.

5.4.2. Important factors to consider when reviewing projects are:

5.4.2.1. Ensure technical adequacy.

5.4.2.2. Ensure compliance with the standards, directives, and publications.

5.4.2.3. Ensure C4 Systems Project Cover Sheet information is complete and accurate.

5.4.2.4. Review completeness and accuracy of LOM and Tab B.

5.4.2.5. Review distribution list.

5.4.3. In all cases, the object of project package review is to develop an accurate product which will enable a speedy installation with minimum disruptions thereby delivering to the customer a quality product when promised.

5.4.4. Distribution. The number of project package copies and their distribution is based upon customer requirements and internal EI unit needs. Typical distribution is as follows:

5.4.4.1. One copy to the requiring MAJCOM headquarters. For Air National Guard projects, one copy to ANG/SCXX.

5.4.4.2. One copy to the appropriate base Communications-Computer Systems Officer (CSO).

5.4.4.3. One copy to the appropriate operating agency.

5.4.4.4. One copy to the responsible project manager/production controller w/o drawings.

5.4.4.5. Two copies with at least two full size base coded drawings (remaining C sized copies) to the performing installation unit. Annotate C4 Systems Project Cover Sheet to show "Full Size Drawings for Team Chief".

5.4.4.6. Local distribution is determined by the engineering activity.

5.4.5. Classified Project Packages. Classified portions of a project package will be mailed under separate cover and which identify that the unclassified portion has been sent separately.

5.5. Project Implementation

5.5.1. Once the customer notifies the PM that all project materiel has arrived and all support required by the PSA has been arranged, the PM will schedule a team to perform the installation.

5.5.2. Occasionally, during the implementation phase of a project, changes to the published package are required. The following outlines the basic guidelines to initiate and issue changes to the published project packages.

5.5.2.1. The following changes can be initiated by the customer or EI activities:

5.5.2.1.1. Customer activities and on-site team chiefs recommend changes by forwarding an AF Form 1146, **Engineering Change Request/Authorization (ECR/A),** to the appropriate engineering activity. The engineer will reply to the ECR/A (see Attachment 26)by completing the form and making necessary distribution. Normally ECR/As are sent back and forth via E-mail. In addition, engineers frequently give verbal approvals to team chiefs and then follow up with written confirmation. **Note***:* Distribute ECR/As to the same organizations listed on the project package's C4 System Project Cover Sheet.

5.5.2.1.2. The engineering activity prepares an AF Form 1146 and attaches it to the Record of Corrective Action when replying to deficiencies identified by the team chief on the Record of EI Project Review. If additional materiel is required, the engineer prepares a supplemental LOM.

5.5.2.1.3. The engineering activity may originate changes whenever the need becomes apparent by preparing an ECR/A. The engineer must coordinate all changes with the assigned project manager/production controller to obtain necessary funding.

5.5.2.2. Changes - Engineering. Changes will be issued by the engineering activity as follows:

5.5.2.2.1. If additional LOM items are needed, the engineer develops a supplemental LOM and coordinates with the project manager/production controller to secure funding, if necessary.

5.5.2.2.2. The ECR/A, AF Form 1146, is issued for a change in the Tab B only.

5.5.2.2.3. Simultaneous changes to both Tab A and Tab B will normally be issued, except when on-site engineering is involved. In that case, follow paragraph 6.4.15.1.5. to accomplish the changes to the Tab B portion of the project.

5.5.2.2.4. An ECR/A to a published project made by an on-site engineer during the installation phase of that project must be documented in sufficient detail to support follow-on maintenance by O&M personnel and future engineering. The engineer will annotate, sign, and date a working copy of all documents affected by on-site changes and list these documents as attachments to the AF Form 1146.

5.5.2.2.5. The AF Form 1146 that includes changes to Tab B should clearly indicate the specific changes (by paragraph, drawing number, etc.) to be made in the original package.

5.5.2.2.6. Engineering changes may direct project recipient to make pen and ink changes to the Tab B. The changes should be limited to four one-line entries per page. Number and date of the changes should be posted to the project cover and the first page of the changed Tab B.

5.5.2.2.7. Changes that do not meet the above criteria must be provided as a stand-alone supplemental project package in the form of an ECR/A. If appropriate, make a notation in the margin adjacent to the changed paragraph or page of the basic package, indicating there is a change to that paragraph or page. Recipients of the supplemental project package should indicate on the C4 Systems Project Cover Sheet of the basic package there is an ECR/A and annotate the date of change.

5.5.2.2.8. When changes involve replacing more than approximately 40 percent of the Tab B pages, the entire Tab B should be replaced.

5.5.2.3. On-Site Engineering. On-site engineering may be accomplished during the installation phase of projects. This usually occurs when insufficient time or information is available to develop a comprehensive project package. The on-site engineering project package is usually abbreviated with minimal information provided. Information for each heading may not be available or may be incomplete. An on-site engineer project package must provide the installation team chief with a written test plan and installation drawings adequate for maintenance use and follow-on engineering. *NOTE*: When projects are to be on-site engineered, the team chief will still be solely responsible for the installation and administrative procedures. The on-site engineer will support and assist the team chief in the timely accomplishment of the project, by providing technical expertise and problem solving.

5.6. Special Engineering Considerations and Requirements. When engineering C4 requirements, the engineer should consider: equipment, system interface, initial and life cycle cost or support, usage of standards for records and equipment, training (engineering, base support personnel, and/ or installation team) required, and the STEM blueprints.

5.6.1. Every PSA, will include the predicted EMC impact of the proposed installation and a description of all potential EMI both to and from other systems. Also include the predicted EMRH impact of

the proposed installation with descriptions of all potential EMRH to personnel, fuel, handling operations, and to devices. EMC and EMRH considerations and controls required during installations and operations will be included in every PSA. The EMC and EMRH impact descriptions should be based upon results of specialized studies, data from 738 EIS/EEE, Joint Spectrum Center, equipment manufacturers, standard drawings, etc. Direct requests for specialized EMC and EMRH support to the 738 EIS/EEE. Any organization may request these specialized services. (See Chapter 2 of this publication and TO 00-25-108)

5.6.2. Laser hazards to personnel, Electro-Explosive Devices (EED), and POL will be considered and an appropriate statement will be included in the PSA. DODI 6055.11 contains information on laser hazards to personnel. The base Bio-Environmental Engineer (BEE) is responsible for recommending laser hazard control measures. HQ AFMC/RZC, Armstrong Labs, and HQ ASD/ENAC provide guidance and assistance for laser related hazard problems. The implementation of grounding, bonding, and shielding of all C4 systems will be in accordance with MIL-STD-188-124C, MIL-HDBK-419A, *National Electrical Code (NEC)* and Technical Order 31-10-24. In case of conflicts, the MIL-STD will be the governing document for facilities and installations.

5.6.3. Electromagnetic Pulse (EMP). When EMP survivability has been established by the customer as an operational requirement, it will be a primary consideration in facility engineering.

5.6.3.1. Survivability is defined as the degree to which a system is able to withstand a hostile environment (in this case EMP) without suffering an abortive impairment of its ability to accomplish its designated mission. HEMP induced stress can cause electronic systems to malfunction due to circuit damage or upset.

5.6.3.2. When EMP survivability is required, it should be discussed with the customer early for technical and budgetary concerns. High-altitude Electro-Magnetic Pulse (HEMP) protection should also be taken into consideration for ground based C4 system facilities. Guidance is contained in MIL-STD-188-125A. The 738 EIS/EEE provides EMP consulting services as well as HEMP acceptance and verification testing. Direct requests for EMP/HEMP support to the 738 EIS/DOO.

5.6.4. TEMPEST and Other Hazards. The project engineer must address special shielding against electromagnetic radiation (TEMPEST) considerations for equipment and facilities by contacting the MAJCOM, base or host base TEMPEST Officer. The engineer will include guidance for the control of hazards, such as ionizing radiation, asbestos, chemical, climbing, and airfield clearance criteria, and should avoid creating safety hazards and requiring unsafe installation procedures. The 738 EIS/EEE provides shielding consulting services as well as shielding effectiveness testing. Engineers will not order Ozone Depleting Chemicals (ODC) unless an AF ODC waiver was obtained.

5.6.5. Telecommunications. When engineering a facility that uses either on or off base transmission media to interconnect elements of the facility, the engineer will specify the required performance characteristics of the supporting circuits in accordance with Defense Information Systems Agency (DISA) Circular 300-175-9. Required telecommunications testing and analysis may be obtained from 738 EIS/EEET. Also, the engineer will identify testing procedures required so the operating unit may accomplish the specified test.

5.6.6. Fiber Optics. When fiber optic (FO) projects are engineered, TO 31-10-34, *Standard Installation Practices, Fiber Optic Communication Cable and Connectors*, will be used as the baseline docu-

ment. If the TO does not provide guidance an industrial standard such as TIA/E1A may be used. The following provisions also apply:

5.6.6.1. Electrical Fusion of FO splices is the desired method of splicing both multi-mode or single mode FO cable.

5.6.6.2. Mechanical splices may also be used in applications where installation speed is a factor, preformed pigtails are called out, short FO runs where increased mechanical spice losses are not a factor, or when specifically requested by the customer.

5.6.7. Confined Spaces. When engineering a project which requires work in the confined space certain guidelines must be followed.

5.6.7.1. General. Engineers are required to strictly adhere to safe working procedures designed for the entry, working in, and exiting of confined spaces. All EI personnel must be conscious of the unusual hazards associated with confined spaces and understand that confined spaces are not designed for continuous employee occupancy.

5.6.7.1.1. EI personnel will not enter any confined space that is not properly identified as a communications manhole/vault.

5.6.7.1.2. Regardless of what the host base has classified a confined space, personnel will not enter until the area has been tested for atmospheric contaminants and declared safe for entry.

5.6.7.1.3. A minimum of two personnel are required on any confined space work.

5.6.7.1.4. A confined space is classified as safe for entry when it tests as having no hazardous atmosphere, has no unguarded electrical, has no engulfment potentials, and has no potentials of developing a hazardous environment such as carbon monoxide, fuel vapors, or possible leaking from chemical storage.

5.6.7.1.5. During engineering surveys where the engineer is in and out of the confined space and he/she does not stay longer than 30 minutes, (to avoid a potential oxygen deficient atmosphere), then the engineer must make sure the atmosphere is tested immediately before entry. Continuous monitoring and continuous forced air ventilation is only required when atmospheric contaminants are detected when testing. Two personnel are required to be at the confined space. An observer is required when atmospheric contaminants are detected and continuous testing and continuous forced air ventilation are necessary to keep the confined space non-hazardous. The two personnel will have emergency telephone numbers and have access to communications for emergency calls.

5.6.7.1.6. Emergency capability must be available in case of accidents

5.6.7.2. Confined Spaces with Electrically Energized Parts. The following procedures apply to any type of work performed by communications engineers, quality assurance evaluators, and or installations technicians that involves electrical power and communications equipment/cable located in the same manhole, handhole, vault, or comm room. Exceptions to the following procedures can only be granted through the host base Safety Office.

5.6.7.2.1. Before any work begins, manholes, vaults, handholes, and comm closets will be positively identified as to utility type (communications, electrical power distribution, sewer, etc.) prior to entry. In the absence of positive identification, personnel will coordinate with the base ground safety officials and contact the appropriate base organizations to establish posi-

tive identification. These will normally include civil engineering electrical shop, base communication unit, and the base fire department. Reference Air Force Occupational Safety and Health Standard 91-50, Chapter 4.

5.6.7.2.2. Occupational Safety and Health Standard 1910 Subpart S (Electrical) parts 301, 302, and 303 provide definitive requirements in design safety standards and safety related practices to protect unqualified personnel from being injured. Specifically, in 1910.303 paragraph (g) (2) (Guarding of live parts), the standard states that live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by the use of approved cabinets or other forms of approved enclosures, or by any of the following means: (ii) In locations where electrical equipment would be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage. If the manhole, handhole, vault, or comm room is a joint use area (comm and power) and comm work is to be accomplished, then the power cable, equipment, etc. has to be guarded as specified in the above mentioned standard. Communications engineers and installers are not qualified to enter a manhole, handhole, vault, or comm room containing power until the guards are in place. This standard would apply to any person (military or contractor) that has to work in joint use facilities.

5.6.7.2.3. The National Electric Code 70 series parts 800-11 subparagraph (a) address construction requirements for maintaining safe working environment for technicians having to work in joint use facilities. “Underground communications wires and cables in a raceway, handhole, or manhole containing electric light or power conductors shall be in a section separated from such conductors by means of brick, concrete, or tile partitions. The above mentioned requirements are the minimum safeguards for unqualified personnel (communications types) that must be met before communications work can proceed in joint use manholes, handholes, vaults, and communications rooms.

5.6.8. Standard Installation Practices Technical Orders (SIPTOs): SIPTOS are technical orders that provide illustrations and step-by-step procedures for installers. SIPTOs are used by engineers in the preparation of projects. SIPTOs are not required to be listed unless specifically referenced in the project task instructions. All others must be listed or referenced in the project Tab B Table 2, Attachment 18.

Chapter 6

EI TEAM AND PROJECT MANAGEMENT

6.1. General. This chapter provides guidance and assistance to units with an EI mission in the day-to-day management and supervision of EI teams. Managers of EI resources are responsible for having a working knowledge of information in this Chapter and related publications. Attachment 1 is a list of abbreviations, acronyms, forms, publications, and preferences used in this and related publications. Refer to this Attachment as necessary for clarification.

6.1.1. Qualification of Supervisors and team chiefs. The following criteria must be met.

6.1.1.1. Work center supervisors must successfully complete the EI Team Chief Academy.

6.1.1.2. Team chiefs will be trained according to Chapter 4 of this instruction

6.1.2. Team Chief Handbook.

6.1.2.1. This instruction, applicable AF 91-series instructions and applicable AFOSH Standards are required to be in the team chief handbook. The handbook may be electronic and loaded on the team chief's computer or all publications and documents placed in a binder.

6.1.2.2. A complete team chief handbook (disc with files or binder) will be temporarily issued to each team chief for each job. On job completion, it will be returned to the publications control office for updating before reissue. Supplements and changes will be forwarded to team chiefs on extended TDY (over 30 days). On receipt, the team chief will update the publications set.

6.2. Safety and Health.

6.2.1. General Safety. Safety is the most important aspect of any job. The success of the team effort depends on strict observance of safety rules and regulations. All personnel must comply with safety regulations. Sound judgment is required in all situations where published guidance is not available or where conditions present situations wherein possible injury to individuals or damage to equipment may result. The supervisor's attitude toward safety is reflected in the approach the team takes in performance of assigned tasks.

6.2.1.1. Team chiefs will:

6.2.1.2. Not participate in the actual work functions when hazardous work is being accomplished (such as rigging, raising towers, or erecting antennas). The team chief's full attention should be devoted to supervision and monitoring safety conditions. Note*:* If the team chief cannot physically be available to supervise the entire operation, the most qualified team member will be appointed safety monitor.

6.2.1.3. Obtain a safety briefing and a safety kit prepared by the Unit Ground Safety Technician or designated representative. The minimum safety kit requirements are:

6.2.1.3.1. Ensure first aid kit, and accident-reporting instructions with appropriate forms are included with each vehicle.

6.2.1.3.2. Ensure all personnel understand the use of AF Form 592, **USAF Welding, Cutting, and Brazing Permit;** AF Form 979, **Danger Tag**; AF Form 980, **Caution Signs;** AF Form

981, **Out of Order Tag**; and Do Not Start Tag, and Warning Radio Frequency Hazard in accordance with AFOSH STD 91-45 and AFOSH STD 161-9.

- Unit Commanders must designate team chiefs as tag-issuing individuals for tagging unsafe equipment
- If assistance is required in preparing the accident-reporting forms, contact the host base safety office. All facts pertaining to accidents will be reported in detail to the host base safety office, the local communications unit, and the unit ground safety office
- If host base stand-by medical assistance is needed, include specific requirements in the notification of arrival (NOA) e-mail message
- When feasible a Lock-Out device must be used in conjunction with Danger Tags.
- When lock-out devices are used, an entry to that effect will be made in block 11, EI Team Chief Log.

6.2.2. Safety Briefings. Team Chiefs will:

6.2.2.1. Conduct safety briefings prior to weekends, holidays, leaves, and prior to start of hazardous tasks. Discuss daily work to be performed, safety aspects of the overall job, potential safety hazards and establish procedures to avoid unsafe situations. Document these briefings by subject, in the EI Team Chief Log.

6.2.2.2. Conduct a daily inspection of all equipment associated with the job to ensure serviceability and safety. Unsafe or unserviceable equipment will be affixed with an AF Form 979 and removed from the job site. Return the defective item to the unit installation support flight for repair/replacement.

6.2.2.3. Ensure a safety equipment location is established before beginning work unless one is already present in the immediate area.

6.2.2.4. Ensure bail-out alarms, telephones, non-tactical radios, or other means of direct communications with control tower personnel are available prior to beginning work in the vicinity of an active runway.

6.2.2.5. Coordinate with the host base safety office to determine classification of confined spaces. Ensure all safety precautions concerning confined spaces are adhered to in accordance with AFOSH STD 91-25.

6.2.2.6. Complete and process an AF Form 592 through the local base fire department prior to beginning any torch work, brazing or working on lead, or exothermic welding (reference: AFOSH STD 91-5).

6.2.2.7. Ensure temporary electrical wiring is installed in accordance with applicable standards.

6.2.2.8. Ensure all personnel are aware of the possible hazards associated with any fluid or oil leaking from transformers, capacitors, and diodes. This fluid may contain polychlorinated biphenyl (PCB) which is extremely hazardous to their health. Any leakage, to include vehicles, when sighted will be reported immediately to the host base bio-environmental engineer or the base civil engineering environmental section. Do not disturb leaking fluid or the transformer. Do not handle or transport any transformers or related communications equipment that contain PCB's or other hazardous materiel.

6.2.2.9. Coordinate with base environmental management for instruction on disposal of chemical waste material.

6.2.2.10. Report to Base Safety Office at the TDY location and receive a local safety briefing, ensuring that the safety briefing letter provided by the EI unit ground safety technician has been completed by the host safety office.

6.2.3. General Health. Team Chiefs must be aware of team members mental attitudes as well as their working and living conditions to avoid any adverse impact on team performance or effectiveness. Team Chiefs will direct the member to leave the work site when in the team chief's opinion, a team member's performance or mental attitude is not conducive to job requirements.

6.2.4. Quarters. On arrival at the work location, the team will report to the host base billeting office for assignment of quarters. Base quarters should conform to AFI 34-246. Team members should be quartered in close proximity to maintain team integrity (AFI 34-246). When authorized to reside off base under quarters non-availability status, the team chief will select or approve off-base accommodations for team members. Give consideration to the security of personnel, equipment and vehicles, and distance from the job site when selecting quarters. If problems are encountered in obtaining adequate quarters, messing facilities, etc., the team chief will coordinate all actions to rectify the problem through the chief of base services. If not resolved, notify your section supervisor.

6.2.5. Medical Treatment Overseas. If necessary, get assistance from an interpreter. If the charge for medical or dental treatment is nominal, the team member may make payment with personal funds. This would result in a quicker payment to the doctor; however, this is strictly voluntary. If the team member pays the doctor, an itemized receipt is to be obtained; then, on return to home station, the bill or receipt should be submitted to the resource management office at their Air Force medical facility for reimbursement. The team chief will ensure all medical treatment and medications administered are documented by medical personnel and will ensure the team member has a copy to place into their medical records. Failure to document medications prescribed could possibly cause questionable urinalysis results.

6.2.6. Reporting On-the-Job Injuries.

6.2.6.1. The team chief will immediately notify the local safety office and unit safety POC of any accident and will assist in any resulting investigation. Unit Safety POC will notify individual’s work center supervisor.

6.2.6.2. Fatality. If a fatality occurs, the team chief will immediately notify the nearest military mortuary officer, parent unit, and customer. Base authorities and the parent EI unit will provide necessary guidance in such matters.

6.2.6.3. While away from a military installation, the team chief will:

6.2.6.3.1. Completely secure the area and summon assistance.

6.2.6.3.2. Notify the parent unit and provide name and grade of deceased; name of witnesses; date, time, and location of occurrence; and any other necessary details. The nearest Air Force medical facility will also be notified. If there is none in the area, the nearest US military medical facility will be contacted.

6.2.6.3.3. Obtain a receipt and the address of the storage place if civilian or foreign military authority removes the body.

6.2.6.3.4. Contact the nearest US Consulate office, the Air AttachÈ office, or US Embassy for assistance, if in a nation where there are no US military installations.

6.2.6.3.5. Do not attempt notification of next-of-kin of the deceased or discuss details of the incident with news agencies.

6.3. Project Package Review.

6.3.1. Introduction. The project package is a detailed implementation plan produced by the project engineer to fulfill customer requirements for C4 Project. The implementing unit will review every project package to validate its content for completeness and accuracy.

- The implementing work center will post all ECR/As, amendments, and changes to the project package during the review process to ensure a complete, up-to-date package is available to the reviewer.
- The specific content of a project package is prescribed by Chapter 5 of this instruction.

6.3.2. Review Processing. When the project engineer completes the project package it is routed to the project manager/production controller where it is reviewed for proper content. The project manager/ production controller identifies the reviewing work center(s) and initiates and attaches an AFMC Form 150, **Record of EI Project Review**, to the project package. Review suspense dates, as established by local EI unit policy, are annotated on the AFMC Form 150 and the form and project package are then sent to the primary reviewing work center.

6.3.2.1. The primary reviewing work center will:

6.3.2.1.1. Conduct an initial review of the project package and document results of the review on the AFMC Form 150.

6.3.2.1.2. If one or more supporting work centers are involved in the project, forward the project package for additional review and documentation of discrepancies. Coordinate with other reviewing work centers to validate and agree upon discrepancies and recommended changes.

6.3.2.1.3. Ensure all documentation is complete and accurate then return the package to program management/ production control.

6.3.2.2. The project manager/production controller will examine review results for format accuracy and forward review documents either to Quality Assurance for further review or the engineering activity.

6.3.2.3. The engineering activity will analyze reviewed recommendations, take appropriate corrective measures, and formally reply to the reviewing work centers. Unresolved or disputed deficiencies should be referred to Quality Assurance for resolution.

6.3.3. Review Procedures. A project review is a systematic four-step procedure conducted to ensure the completeness and accuracy of the project package. Qualified team chiefs that have an Air Force Specialty Code (AFSC) compatible with the project commodity should conduct project package reviews. When more than one skill is involved in the project, the primary work center will ensure all supporting work centers review their portion of the project package. This procedure consists of four sequential steps (inventory, familiarization, review and documentation) to ensure that all aspects of the projects are covered in detail.

Table 6.1. Project Package Contents.

TAB A	TAB B
Project Package Cover	: Cover Sheet (Table of Contents for Tab B)
List of Materiel	:Installation Description and Special Instructions
Section 1 - Equipment (3080)	:Table 1 -Drawing List
- Depot Level Repairable (3080)	: Table 2 - Publication List
	: Table 3 - Special Tools/Test Equipment List
Section 2 - Parts and Supplies	: Table 4 - Task List
	: Task Instructions
	: Attachments to Tab B
	: Testing Forms (if applicable)
	: Project Support Agreement (PSA)
	: Endorsed PSA (EPSA)
	: Drawing and Sketches
Note: LOM sections will be omitted if no requirement exists for materiel items.	

6.3.3.1. Inventory is the first step of the review process. Figure 6-1 shows the normal contents of a project package described in Chapter 5. Use this outline to inventory the package. Use the drawing list to determine if drawings and sketches provided with the package are the same as called for on the list. Check drawing numbers, sheet numbers, and revisions.

6.3.3.2. Familiarization, the second step, is reading the package to become familiar with the requirements of the project. The project title on the cover sheet will identify the type of project being reviewed. The installation description and special instructions page will also briefly describe the project. The task listing outlines the major steps which must be accomplished to complete the project. These will acquaint you with the project requirements and help in performing the rest of the review.

6.3.3.3. Review is the third step. Since each project is different in requirement and complexity, the time required to do a thorough project review will vary from project to project. Allow enough time to properly review the package. Performing a thorough review can eliminate the majority of implementation problems. Regardless of the type of job, a thorough review of any project package can be accomplished by following procedures identified in this chapter.

6.3.3.4. Documentation of review findings is the fourth and final step of the review process. Transfer review findings, from notes made during review, on Record of EI Project Review (Attachment 23), and if necessary on a Narrative Continuation Sheet. Process the documents IAW with local unit procedures.

6.3.4. Review Details:

6.3.4.1. Tab A Review:

6.3.4.1.1. Project Cover (C4 Systems Project):

6.3.4.1.1.1. Although most of the general information listed on the project cover is relevant, some parts are more important to review. The organization, Functional Address

Symbol (FAS), name and DSN number, of the project manager/production controller, project engineer and releasing engineer will be included. Use this as a source for message address information. Also, the comment block may contain useful information for the reviewer.

6.3.4.1.1.2. Another area is the associated projects block, which identifies other projects associated with the project being reviewed. Associated projects are those that impact each other. For example, an installation of new equipment in an existing building may be dependent upon a removal project of some old equipment to make room. The associated projects block should contain information about how the projects affect each other with specifics on time phasing for implementation. Coordination may be required with other work centers designated to implement associated projects.

6.3.4.1.2. The List of Materiel (LOM), is detailed in Chapter 5. It is a comprehensive list of all materiel and equipment required to complete the project. The importance of having the correct materiel called-out in sufficient quantity, and all materiel and equipment being readily available at the job site, cannot be overemphasized.

6.3.4.1.2.1. The LOM must be carefully reviewed and closely compared to task instructions, drawings, and any other project package information identified by the engineer. Materiel deficiencies in the LOM or any other project documents must be accurately identified along with recommended materiel changes or substitutions.

6.3.4.1.2.2. Minimum Cut Lengths (MCL) and real property:

6.3.4.1.2.2.1. Certain LOM items, such as cable, innerduct, rope, or wire may be required in specific minimum lengths known as a Minimum Cut Lengths (MCL). The engineer should identify MCLs via remarks at the bottom of the LOM. During project review, compare MCLs called out against cable drawings to ensure correct lengths are specified; note any deficiencies.

6.3.4.1.2.2.2. Towers and telephone poles may become real property when installed by EI teams. The team chief will coordinate with BCE on what will and will not become real property on the host base. These items will be identified in Section 1 of the LOM as "potential real property." Items to be preinstalled by allied support may also be identified in Section 1 as early shipment items.

6.3.4.2. Tab B Review:

6.3.4.2.1. The cover sheet is a table of contents for Tab B and should be used to inventory Tab B of the project package.

6.3.4.2.2. The installation description and special instructions includes a brief description of the facility to be installed, removed, or relocated. The work site location of project to include building and room numbers, if appropriate. If the project facility or equipment must be integrated into existing systems, there should be a statement explaining how this equipment will interface with the existing plant. Work to be accomplished by other activities simultaneously with project implementation should be described in detail. This paragraph will not be used as a tasking document, but as an explanation of requirements in the PSA. All special instructions to the team chief should be identified, especially unique safety requirements associated with

the implementation. For removals, disposition instructions for removed equipment must be identified.

6.3.4.2.3. Table 1 of Tab B (Attachment 17) is a comprehensive drawing list for the project package. This list contains drawing numbers, sheet numbers, revisions, and short title of all drawings required for implementation. The list should itemize project drawings, PSA drawings, and sketches as referenced in the project package. If a task instruction references a drawing, it must be listed and provided with the package. If a drawing is listed, it should be referenced for usage in Tab B.

- PSA drawings provided with the project package may be for reference only. The team chief will use these to verify completion of host base and customer support requirements before starting the project.
- When multi-sheet standard drawings are included in the project package, and if sheet one is called out for, only sheet one revision is needed. If sheet one is not included, then each drawing must have the proper revision.

6.3.4.2.4. Table 2 of Tab B (Attachment 18) is a comprehensive list of publications required for implementation. When a publication is referenced for usage in the package, the publication must be listed. If a publication is listed, then it should be referenced for usage in Tab B. Standard Installation Practice Technical Orders (SIPTOs), AFIs, and other publications common to EI projects need not be listed unless there is a specific reference to it in the project package. Commercial publications or installation manuals will also be included on Table 2. *NOTE:* If commercial publications or manuals are not available through normal government publication sources, they must be provided to the team chief by the project engineer. Table 2 should have notes explaining how these publications are to be furnished.

6.3.4.2.5. Table 3 of Tab B (Attachment 19) is a complete list of special tools and test equipment required for implementation. These are special tools or special test equipment not authorized in the Allowance Standard (AS) for an EI unit. Since these items may not be available in the unit support section, special attention must be given to ensure availability. These requirements will be identified to the work center supervisor to accomplish necessary coordination to obtain them. Table 3 should also provide the function and purpose of these items and sufficient data to allow procurement.

6.3.4.2.6. Table 4 of Tab B (Attachment 20) is the task listing which provides a breakdown of individual tasks. Chapter 5 defines a task as a self-contained portion of the installation that can be concisely described without extensive reference to other portions of the installation. The task breakdown is the organizing aid to both the installer and engineer. The task list is formatted in columns.

6.3.4.2.6.1. Column 1 contains the task number beginning with 1, then sequentially through all listed tasks. If the project requires ten separate tasks, the task numbers would be 1 through 10.

6.3.4.2.6.2. Column 2 contains the sequence numbers assigned to each specific task. Sequence numbers indicate the order in which the task must be accomplished during implementation of the project. The same sequence number may be assigned to several tasks in a group, where the tasks within that group are performed simultaneously or where there is no preference for sequence of accomplishment. **Note:** The engineer may leave the

sequencing up to the team chief. To do this a statement must be made in the Installation Description and Special Instruction section.

6.3.4.2.6.3. Column 3 contains the title of the task. It should include equipment types and floor positions, if applicable; for example, Anchor MT-686 Equipment Rack at FPI 1001.

6.3.4.2.6.4. Column 4 contains implementation references that explain where to find information necessary to perform the task. This may be a publication reference, drawing reference, or task instruction reference. **Note:** If there is a single document (drawing, TO, regulation) that provides the information necessary to perform the task and the form in which the information is presented is adequate without further elaboration or clarification by the engineer, then that document should be entered in the installation reference column. There is no need to provide a task instruction. (see Chapter 5.)

6.3.4.2.6.5. Column 5 contains location information, such as building numbers, room numbers, site locations, and grid map locations.

6.3.4.2.7. The task instructions are detailed implementation instructions which provide complete guidance to enable the team chief to accomplish the task. The publication references must call out specific sections to be used, such as chapter, paragraph, figures, and tables. The drawing references must identify drawing number, sheet number, revision, and appropriate specifications. When reviewing task instructions, concentrate on feasibility of implementation. For example, if a task instruction reads "Assemble equipment racks IAW drawing LDBWS00931AD000, sheet 1, rev G, and anchor racks to concrete floor IAW TO 31-10-29, at floor positions 1121, 1122, and 1123 indicated on drawing SHCZB04002FP000, sheet 1, rev D," thoroughly analyze every aspect to determine if the task can be accomplished. See if TO 31-10-29 is on the publication list and referenced sections are clear and appropriate for the task. See if referenced drawings are on the drawing list and are provided with the package. Check the assembly drawing for adequate instructions and to verify any required materiel items, which are not an integral part of the assembly, are included in the LOM. Check the floor plan drawing to see if Floor Position Indicators (FPI) and other equipment location specifications are clearly marked. Determine the amount of required anchors by counting racks and number of anchors needed for each rack, then ensure sufficient number is called for in the LOM. Another important area of the task instructions is the test plan. The testing instructions must be clear, detailed procedures to include, but not limited to:

6.3.4.2.7.1. Test procedures to be conducted, including any special tests.

6.3.4.2.7.2. Specifications, criteria, or desired levels.

6.3.4.2.7.3. Step-by-step procedures.

6.3.4.2.7.4. Duration of test.

6.3.4.2.8. Tab B will have several attachments that must be reviewed to determine accuracy and affect on implementation.

6.3.4.2.8.1. If required, test data sheets or forms will be attached. These documents will be annotated with appropriate data and upon project completion become part of the facility records: a copy is attached to the finalized AF Form 1261.

6.3.4.2.8.2. The PSA is a document prepared by the project engineer and sent to the host base requesting various types of support. It consists of a basic letter and several attachments which outline support required by the implementing activity in order to complete the project. The basic letter specifies appropriate attachments and general support requirements levied on the host base. The following outlines a typical PSA by area and identifies the sections to be reviewed for impact on implementation: **Note:** For more detailed information refer to Chapter 5.

6.3.4.2.8.2.1. The first attachment is Siting and Project Installation Data. This document describes the exact equipment location such as base location, building number, room number, and placement of equipment as shown on floor plan drawings. Compare the location identified on the specified drawings to the reserved space described in this attachment. This attachment will also contain other equipment placement data such as waivers, limitations, restrictions, etc. This data should be reviewed for clarity and applicability to the project.

6.3.4.2.8.2.2. The next attachment is the Base Civil Engineering (BCE) support requirements. It outlines support to be provided by host BCE. The primary areas to check are the requirements relative to supporting construction, (site work, exterior utilities, buildings, tower pedestals, cable ports, etc.). If electrical power is to be installed in support of the project, verify adequacy of general power, technical power, and grounding considerations. Another area to check is Special Services which identifies special items of support not covered elsewhere, including: cranes, water trucks, high reach vehicles, shop services (welding, machine, carpentry), trenching, landscaping, etc. Check miscellaneous requirements such as building restoral actions, staking of buried utilities for proposed trenching routes, reservation of space in existing ducts and conduits.

6.3.4.2.8.2.3. The host base communications unit support requirements are similar to the BCE support requirements except they are directed toward the host base communications squadron. These requirements include information about circuits, leased equipment, frequency assignments, Telecommunications Service Requests/Telecommunications Service Orders (TSR/TSO) and climbing protection for tall structures. References to COMSEC equipment installations will include applicable COMSEC and TEMPEST considerations. (If test equipment is to be furnished by the customer during implementation, agreements made with the customer should be identified). Downtime for existing operational equipment must be addressed. The engineer should have discussed this with the customer during the site survey and needs to include it in this attachment. A very important aspect is the staking or marking of buried cable and/or utility service for proposed trenching. For removals, the customer is required to obtain disposition instructions for the removed equipment and a statement to this effect should be included. If locally available command assets are being installed, statements about their availability and serviceability shall be addressed here.

6.3.4.2.8.2.4. A drawing list with drawings may be attached to provide valuable siting data and specifications for construction. These drawings will assist support activities in determining support capabilities. Compare drawing specifications, as referenced in various parts of the PSA, to determine applicability and accuracy.

6.3.4.2.8.2.5. The PSA basic letter also contains other requirements to review. An important area is the base support requirements that should identify support required for the project in accordance with AFI 33-104. If base support is not required, the PSA should so state.

6.3.4.2.8.3. The PSA is only a request for support and does not become a formal agreement until the host base responds with the Endorsed Project Support Agreement (EPSA). Compare the concurrence to the support requirements listed in the project package. BCE work order numbers and estimated completion dates should be cited for work to be completed by them. Additionally, any security clearances, Chemical Warfare Defense Equipment (CWDE), safety, and health hazards should be stipulated for implementing personnel.

6.3.4.2.8.4. All drawings attached to Tab B should be listed on the drawing list. This should have been previously determined during the inventory by comparing listed drawings to drawings actually provided. The accuracy of drawing specifications also should have been previously determined by comparing task instructions to drawing specifications as task instructions were reviewed. In addition to specifications, check the drawings for clarity. Blurred, smeared, or unreadable drawings could create a problem during implementation.

6.4. Project Management. Following are general support areas team chiefs may deal with during the course of a project. Familiarity and knowing what action to take significantly influences levels of success.

6.4.1. Labor Disputes. The team chief will immediately report to the supervisor any information concerning possible or threatened objection to the EI team's presence or any other labor dispute which may affect government agencies or DOD.

6.4.2. Disasters, Civil Disorders and Incidents. EI teams should avoid known disaster areas. The team chief will:

6.4.2.1. Render all possible assistance if local authorities request assistance, in case of a natural disaster or emergency situation.

6.4.2.2. Notify the parent unit as soon as possible by the most expeditious means available, if detained by local authorities or if the team becomes involved.

6.4.3. Command Incident Reporting (CIR). Team chief will immediately report on serious crimes or incidents involving team members while TDY to parent unit and local authority. The team chief will:

6.4.3.1. Handle CIRs as a confidential matter.

6.4.3.2. Report incidents involving foreign governments to the nearest American Embassy, Consulate, military mission, or installation (as applicable) when traveling in or through a foreign country.

6.4.4. Wartime Contingencies. When Operational Plans (OPlan) are executed, EI teams working in High Threat Areas (HTA) will be responsible to theater (host) commander requirements.

6.4.5. Property Damage. The team chief will immediately report the circumstances to the proper local authorities and to the parent unit and provide:

6.4.5.1. Name and address of the property owner.

6.4.5.2. Date, time, and location of the incident.

6.4.5.3. Names and addresses of witnesses, if any.

6.4.5.4. A detailed narrative of circumstances leading to the cause of damage.

6.4.5.5. A description of the damage.

6.4.5.6. An estimated cost of the damage. **Note:** Personnel shall at no time admit fault if involved in an accident with a government or commercially leased vehicle.

6.4.6. Cable or Utility Damage. If a communications system cable, electrical power line, or other utility is damaged, the team chief will:

6.4.6.1. Immediately notify the assigned 24-hour contact point or host base communications unit Job Control at the TDY location and provide details of the damage.

6.4.6.2. Determine which agency is responsible for the cable or utility and notify them of the damage.

6.4.6.3. Contact the parent unit by telephone and provide: Record details of incident on AFMC Form 165, **Utility Cut/Damage Report**, and retain the annotated report in the project folder.

6.4.6.3.1. Date and time of cable or utility damage.

6.4.6.3.2. Cable or utility involved.

6.4.6.3.2.1. Identify cable by number, size, type, gauge, and counts affected.

6.4.6.3.2.2. Type of utility if other than communications cable.

6.4.6.3.2.3. Critical circuits or services affected (if known).

6.4.6.3.2.4. Assistance required (materiel and/or personnel).

6.4.6.3.2.5. Estimated restoration time and date.

6.4.6.3.2.6. Brief and concise details (including information on AF Form 103, **Base Civil Engineering Work Clearance Request,** cable markers, etc.) regarding the damage and corrective action being taken.

6.4.6.3.2.7. The project number in progress when the damage occurred.

6.4.6.4. Send an E-mail containing all information in paragraph 6.4.5. and 6.4.6. above to the EI unit program management/production control office, information copy to the unit ground safety office, and work center supervisor.

6.4.7. Government Motor Vehicles: The EI unit vehicle operations branch will provide a trip kit IAW AFI 24-301, Transportation, and Vehicle Operations.

6.4.7.1. Vehicle Inspections: When government motor vehicles are to be used, the team chief will ensure that a thorough inspection of each vehicle is performed and documented before departure, during operation, and after return to home station using AF Form 1806**, Operator's Inspection Guide and Trouble Report (Special Purpose Vehicles)**, and AF Form 1800, **Operator's Inspection Guide and Trouble Report (General Purpose Vehicles)**.

6.4.7.2. While at the work location, the team chief will ensure that a daily operator's inspection is performed prior to use of each vehicle and that inspections are properly documented.

6.4.7.3. On the first day of each month while TDY, the team chief will annotate the current months AF Forms 1800 and AF Forms 1806 with appropriate data (deferred work order numbers, etc.).

6.4.7.4. The team chief returns the completed forms for the previous month to the EI unit motor vehicle section.

6.4.7.5. Operator Maintenance. Vehicle operators are responsible for organizational maintenance IAW AFI 24-301.

6.4.7.6. Operation and Controls. Vehicles such as tractor-trailers, high and low profile line trucks require two qualified drivers for extended trips beyond the local area. The unit commander determines the number of personnel required in vehicles such as pickups, six-passenger cargo types, and 3/4 and 1 ton telephone maintenance trucks. Inclement weather, hazardous driving conditions, and type of cargo should be considered before departure.

6.4.7.6.1. Government motor vehicles will be operated IAW AFI 24-301.

6.4.7.6.2. All commercial services purchased will be in accordance with Government Vehicle Operations Pamphlet, "Your Guide to Service Stations for Gasoline, Oil, and Lubrication." Substantiate purchases with a copy of the service station delivery receipt. Mail purchase receipts to the parent organization IAW unit policy. **Note:** When purchasing gasoline for government vehicles from commercial services stations, use the lower-cost self-service pumps.

6.4.7.6.3. When funds are for government vehicle parts or when maintenance is obtained from a commercial source while enroute to or from a TDY location, obtain two copies of the receipt. Immediately send one copy to the parent EI unit installation support flight for processing. The team chief keeps a record copy.

6.4.7.6.4. Government-owned or leased vehicles will only be used in support of mission requirements. When TDY, personnel are authorized to use government-owned or leased vehicles for travel between the job site, quarters, and the dining facility. When public transportation is not available or its use is impractical, government-owned or leased vehicles may be used after duty hours consistent with the provisions of the JTR, Volume I; JTR, Volume II; and AFI 24-301, subject to the approval of the EI unit commander.

6.4.7.7. Vehicle Security. When government quarters are used, government-owned or leased vehicles will be parked in safe locations (that is, in the TDY location transportation compound, lighted areas, or near the quarters of the vehicle driver) as determined by the team chief. When commercial lodging is used:

6.4.7.7.1. Secure all high-value pilferage-type items (test equipment, electronic components, etc.) in the vehicles or move them inside quarters with the team.

6.4.7.7.2. Secure and park vehicles in a well-lighted, patrolled area, if possible.

6.4.7.8. Vehicle Support.

6.4.7.8.1. Routine maintenance. The team chief will contact the EI unit installation support flight vehicle section, by telephone or e-mail, on all team vehicles when deferred maintenance and parts are required.

6.4.7.8.2. The installation support flight vehicle control section will provide the work order number to the team chief.

6.4.7.8.3. Some vehicle maintenance actions are scheduled in advance. In the event the vehicle is being used at a TDY location, EI unit vehicle control must notify the team chief who, in turn, must make arrangements to have the scheduled maintenance performed at the TDY location.

6.4.7.8.4. Maintenance Priority. AFI 24-301, establishes the vehicle maintenance priority system which expedites the maintenance of mission essential vehicles. The team chief will:

6.4.7.8.4.1. Determine the number of vehicles, by type, necessary to be in service at any one time to ensure mission accomplishment. Vehicles in transient status normally receive a routine maintenance priority, IAW AFI 24-301; however, the host base vehicle maintenance officer can assign a priority one for any vehicle on a one-time basis.

6.4.7.8.4.2. Request priority one maintenance service be provided when the normal routine priority will not return the vehicle to a serviceable condition in sufficient time to prevent mission impact when TDY.

6.4.7.8.5. Care and maintenance of special-purpose vehicles. To ensure that special-purpose vehicles and trenchers are adequately cared for and maintained when away from home station, the vehicle operations branch to accompany these vehicles will provide a trip kit. The kits must include technical data (operator maintenance and spare parts manual or catalog) and tools (such as grease guns, spare trencher teeth, trencher tooth removal tool, etc.) necessary to perform operator maintenance. The team chief must ensure that operator maintenance is performed daily, following procedures outlined in manufacturers technical manuals or TOs.

6.4.8. Commercial Transportation. The team chief will:

6.4.8.1. Check with the travel section and verify the Transportation Request (TR) is annotated to reflect any authorized excess weight.

6.4.8.2. Ensure all team members are familiar with, and comply with, customs requirements IAW DODR 5030.49 and the USAF Foreign Clearance Guide.

6.4.8.3. Determine and comply with the prescribed traveling uniform regulations.

6.4.9. Military Air. The team chief will:

6.4.9.1. Verify adequacy of piece and weight allowance as authorized in special orders for both accompanied and unaccompanied baggage, including authorized excess accompanied baggage.

6.4.9.2. Verify accuracy of piece and weight allowance as authorized in special orders for tools and test equipment. Request any changes needed through the work center supervisor.

6.4.9.3. Obtain Military Transportation Authorization (MTA) and verify that the MTA authorizes any required excess weight.

6.4.9.4. Find out where and when equipment will be loaded aboard the aircraft and by whom.

6.4.9.5. Find out and follow-up with the prescribed travel uniform regulations.

6.4.9.6. Arrange for in-flight lunches, if applicable.

6.4.9.7. Find out flight schedules, reporting time and place and advise team members accordingly.

6.4.10. Travel by Privately Owned Conveyance. The team chief will:

6.4.10.1. Advise team members of their responsibility to have adequate funds to cover minor emergencies as well as normal expenses.

6.4.10.2. Explain allowable travel time by common carrier and the latest permissible reporting time at the destination following good safety practices.

6.4.10.3. Ensure team members traveling in POVs at no expense to the government understand there must be sufficient drivers to return all military vehicles to home station. The privilege of using their POVs shall not interfere with the EI mission.

6.4.11. Return to Home Station.

6.4.11.1. Personnel may return to their residence on non-duty hours/days with prior approval of the team chief. Distance involved, weather conditions, and job requirements will be considered. The performance of any official duty while in the area of their home duty station will terminate their TDY, unless a return is authorized in their initial TDY travel orders or by subsequent amendment, this additional cost must be approved by the customer. If the customer will not pay for a return trip then it cannot appear on the orders.

6.4.11.2. Returns within the metropolitan/local area of home station on non-duty days will be identified in the individual's travel voucher. The metropolitan/local area is defined in home base supplement to AFMAN 65-506 and no orders are required. Check with the home base finance office, reference JFTR, Volume I, for guidance. Individuals will be reimbursed based upon least cost to the government. For example, individuals will not be paid more in combined travel and per diem than the per diem rate at the TDY location.

6.4.12. Local Purchase and Requisitioning of Contract Services, Rental, and Supplies. There are several methods of obtaining services and supplies available to the team chief while deployed to the job site. These methods involve the use of AF Form 616, **Fund Cite Authorization**; International Merchant Purchase Authorization Card (**IMPAC**), AF Form 9; **Request for Purchase**, and AF Form 15, **USAF Invoice**.

6.4.12.1. AF Form 616 (DFAS-DER 7010-1), provides the authority for the team chief to expend funds for contractual services, rental of equipment and purchase of supplies exceeding $2,500.

6.4.12.1.1. Prior to departing TDY to the job site, the team chief should identify known contractual requirements, such as crane or trencher rental (with or without operator) to the unit resource advisor. After obtaining personal and specific job information from the team chief, the unit resource advisor will generate an AF Form 616 with a fixed dollar value and an effective and expiration date.

6.4.12.1.2. If required while at the TDY job site, the dollar value of the AF Form 616 may be increased; likewise the expiration date may be extended if necessary. The AF Form 616 may

be hand-carried, mailed or electronically transferred to the team chief and the customer P&I POC.

6.4.12.1.3. The team chief uses the AF Form 616 at the job site for authority to initiate AF Form 9 to request contract services through base contracting. The team chief lists each obligation document issued against the AF Form 616 fund cite by number, date, and dollar amount obligated. The most common obligation document is SF Form 1449, **Solicitation/Contract/ Order for Commercial Items**. Do not initiate an AF Form 9 for any purpose not specifically identified on the AF Form 616. Contact your unit resource advisor for any new requirements

6.4.12.1.4. When all obligations authorized by the AF Form 616 are completed, the team chief enters obligation information on back side of the form followed by the statement: "The record of entries is complete." The form, along with all obligation attachments, are returned to the unit resource advisor by mail or hand-carried if project is complete.

6.4.12.2. The IMPAC card is used by the team chief to locally purchase project materiel, small equipment items, repair of equipment and vehicles, and rental valued up to a maximum of $2,500 per transaction**.** The IMPAC card is the preferred method of obtaining necessary support items both in station and at the TDY location.

6.4.12.2.1. The unit resource advisor monitors and controls use of IMPAC cards by issuing control numbers before the team chief deploys or a separate control number is issued before each individual purchase is made. As such, the team chief must coordinate with the resource advisor prior to departing on a project. While each EI unit procedure may very, it's important each team chiefs knows precisely when and how to coordinate IMPAC purchases with their unit resource advisor.

6.4.12.2.2. If a team chief does not have access to an IMPAC card, coordinate with the unit resource advisor and customer P&I POC prior to departure to establish the method of locally purchasing project materiel. Depending upon the method of project funding, it may be necessary to transfer funds to the customer so they can locally purchase materiel to support the project. Alternately, the customer may agree to use their own IMPAC account to purchase materiel as needed.

6.4.12.3. AF Form 9, AFI 64-109 (see Attachment 24). The AF Form 9 may be used when an AF Form 616 has been issued to purchase contractual services, such as a crane or trencher (with or without operator) or supply items that cannot be obtained through base supply or from a single vendor when the cost totals over $2,500.

6.4.12.3.1. AF Forms 9 are prepared and submitted electronically by the customer P&I POC or customer resource advisor. The team chief is responsible to manually draft the form and provide all necessary information to the submitter.

6.4.12.3.2. Submission of the AF Form 9 should result in base contracting letting a contract with a commercial vendor. The contract is documented on SF Form 1449. Be sure to forward an information copy of the 1449 to your unit resource advisor as it becomes a record of obligation against the AF Form 616 fund cite.

6.4.12.4. AF Form 15 (see Attachment 25). The AF Form 15 is used for emergency procurement of supplies or services; usually to prevent a work stoppage. Types of procurement include emer-

gency materiel purchases, rental of equipment without operators, rental of tools, and certain contract services.

6.4.12.4.1. Use of AF From 15 should only be considered when an IMPAC card is unavailable or prohibitive because the requirement exceeds $2500 or an AF Form 9 cannot be processed in a timely manner.

6.4.12.4.2. Like IMPAC cards, AF Forms 15 are monitored by your unit resource advisor and controlled by issuing a control number. Prior to initiating this form, contact you supervisor and resource advisor for consideration of other options or permission to use the form and issuance of a control number.

6.4.12.4.3. If a vendor agrees to accept the AF Form 15, follow the guidance in Attachment 26, complete the form in five copies; leave two with the vendor and return three copies, along with the bill of sale, to your unit resource advisor. Be sure the correct and legible control number is entered on the form.

6.4.12.4.4. When expenditures are expected to exceed $2,500, use of the AF Form 15 must be approved by the base contacting office. Again, the preferred method of obtaining support equipment or services that exceed $2,500 is the AF Form 9; determine if this form can be quickly processed before using the AF Form 15. Do not maintain an "open account" Form 15. An individual AF Form 15 is required for each separate purchase.

6.4.13. Team Chief On-Site Procurement Responsibilities. Regardless of the method used to procure supplies, equipment, or services, the team chief is obligated to ensure accurate descriptions of need and proper delivery of the products or services requested.

6.4.13.1. Be sure to provide the contracting officer (P&I POC or vendor) with accurate information of the work to be performed or equipment to be purchased, required specifications and drawings, type of equipment required, date equipment is needed, and duration of rentals. Remember, for AF Form 9 actions or other requests involving base contracts, the contracting officer is the only individual authorized to negotiate with the contractor. The team chief is not authorized to direct the contractor to perform any task not in the contract.

6.4.13.2. Always attempt to project contractual requirements well in advance. If contracting needs are known before departure, request the P&I POC coordinate with base contracting as necessary to have the contract in place prior to arrival. This can save time and prevent job delays. Also, whether in station or at the job site, always coordinate all actions involving obligation of funds with your unit resource advisor.

6.4.13.3. When coordinating AF Form 9 initiation with the P&I POC or resource advisor, the team chief should consider and ensure special provisions are identified and included in the contract (SF Form 1449). Provisions may include (a) the contractor starting work only when notified by the team chief through the contracting officer, (b) appointing the team chief as Quality Assurance Evaluator (QAE), or (c) having the contractor replace sod, repaint, cleanup, etc. Each project may offer it's own special set of circumstances; be sure they are identified early on and included as necessary in the contract

6.4.13.4. The team chief must ensure contractual obligations are delivered in time and meet all contract specifications. This is accomplished by closely monitoring contractor performance and reporting discrepancies to the P&I POC or the contracting officer. Obtain and closely review a

copy of the contract to ensure all services are performed as specified. Timely delivery of contract services and procurement in the correct amounts of project materiel and supplies all contribute to providing an on-time quality product to the customer.

6.4.14. E-mail. Written communications should be accurate, clear, concise, and correctly addressed. Be sure to use proper protocol when addressing your E-mail by listing addresses in order of rank, i.e., Major before Captain, Chief before MSgt etc.

6.4.14.1. Info E-mail copies should be sent to your home unit, the project manager/production controller, and customer POC. Depending upon the E-mail subject, info copies to the project engineer and STEM-B may also be appropriate.

6.4.14.2. The E-mail subject line should always include the project number and short title of the project, i.e., WIN AG001234, Ajo Radio Relocation.

6.4.14.3. The first line of E-mail text should be prefaced by "TEAM CHIEF SENDS: followed by the E-mail topic, i.e., "Request for QA evaluation," "Anticipated work Stoppage." "Materiel Discrepancy," etc.

6.4.14.4. The second line of E-mail text should reference previous correspondence or telecons, i.e., REF: 23 Jan 01 telecon with STEM B Jake Foster.

6.4.14.5. It's a good idea to number the E-mail body paragraphs similar to the old Autodin message format. This will add clarity and prevent readers from misconstruing E-mail content and purpose.

6.4.14.6. The final numbered line of the E-mail body identifies the POC as in this example: POC: Rudy Nolan, SSgt, 241 EIS Team Chief, DSN 247-1010.

6.4.14.7. Be prompt in sending out important project information! Anticipated work stoppage E-mails should be generated as soon as situations which could halt or slow down a project become known.

6.4.14.8. Hard copies or a disc of all E-mails, memos, and other correspondence should be placed in the project folder for future reference.

6.4.15. Engineering Change Request/Authorization (ECR/A), AF Form 1146, ECR/A (see attachment 26).

6.4.15.1. Submitting an ECR/A.

6.4.15.1.1. If changes to the installation instructions project package or the drawings are required and the engineer is not on site, the team chief will submit the original AF Form 1146 (or use a message or FAX in the form's format) to the appropriate engineering activity. Forward an information copy to the responsible EI project manager/production controller. The host base communications unit plans and implementation manager, and retain one copy for your records.

6.4.15.1.2. Attach sketches, if appropriate, to the original copy of the ECR/A to explain the proposed change. Complete items 2 through 6. Show any change in man-hours or materiel required along with information concerning local availability of materiel in block 6.

6.4.15.1.3. In an emergency or if a work stoppage is imminent, contact the engineer by telephone, e-mail, FAX, or message; and notify the appropriate EI project manager/production

controller and the work center supervisor. Provide all information normally required on the ECR/A. If you contact the engineer by telephone, you must immediately follow-up with a message or FAX in AF Form 1146 format. Telephonic approval of an ECR/A from the engineer is authorized.

6.4.15.1.4. The team chief will not accept blanket authority from an engineer to make changes to the project.

6.4.15.1.5. When on-site engineering is performed, it may become necessary for changes to be made to the project drawings or installation instructions. The engineer will prepare AF Form 1146 documenting the action, and will annotate and sign affected drawings or instructions. The engineer will annotate all documents and will solve all technical problems.

- If the security classification of a ECR/A e-mail is in question, contact the host security officer for guidance prior to transmission.
- DO NOT, under any conditions, proceed with any change to project specifications until you have received an approved ECR/A, FAX, or E-mail in ECR/A format.
- Any changes by the customer will be processed using AF Form 1146 during project PSS and/or implementation.
- If no man-hours or materiel are required, place the following statement in block 6: "no additional man-hours or materiel needed."

6.4.15.2. Documenting ECR/A changes to a project package.

6.4.15.2.1. Project package recipients will make the appropriate pen and ink and page changes to Tab B. The number and date of the ECR/A will be posted to the project cover, AFMC Form 149, **C4 Systems Project Cover Sheet-communications/Information Systems Project**, Tab B cover page and the affected section of Tab B, and appropriate drawings.

6.4.15.2.2. For telephonic approval of engineering changes, document the Engineering Installation Team Chief Log and drawings (revision block area) by indicating ECR/A number, engineer's name, date of approval, and specifications to be changed.

6.4.15.3. Annotating project drawings.

6.4.15.3.1. A total of three sets of specifications and annotated drawings will be required upon project completion.

6.4.15.3.1.1. Annotate one working set of drawings to be used to prepare the final "actual-as-installed" drawings.

6.4.15.3.1.2. After project completion prepare and annotate two final sets from the working set to reflect the actual "installed" condition.

6.4.15.3.2. Update approved changes to drawings and specifications daily using the following appropriate color-coded pencils:

6.4.15.3.2.1. Yellow --For deleted data.

6.4.15.3.2.2. Red --For additions.

6.4.15.3.2.3. Blue --Instructions to the engineer and draft person.

6.4.15.3.3. Project drawings including computer aided drawing design and installation instructions must reflect the project designator.

6.4.16. Augmentation.

6.4.16.1. Whenever personnel are assigned to augment an EI team, the team chief will integrate personnel into the team and render them all guidance, training, and support provided to other members of the team.

6.4.16.2. Augmented activities are responsible for operational control of augmentees.

6.4.16.2.1. Information on augmentees reporting to or departing the TDY location is the responsibility of the team chief on site. The team chief will provide the following information to the augmentees parent unit, the team chief 's unit, and the project manager/production controller via message or e-mail:

6.4.16.2.1.1. Name, grade, and AFSC.

6.4.16.2.1.2. Arrival and departure information.

6.4.16.2.1.3. Billeting location.

6.4.16.2.1.4. Team chief's name.

6.4.17. Team Chief Replacement.

6.4.17.1. When team chiefs are changed, the departing team chief will thoroughly brief the host base plans and implementation manager on project status prior to departure.

6.4.17.2. The departing team chief will thoroughly brief the replacement on current job requirements and progress, to include:

6.4.17.2.1. All job-related documents turned over to the new team chief.

6.4.17.2.2. All accountable items transferred to the new team chief on AF Form 1297, **Temporary Issue Receipt**. Provide a copy of the AF Form 1297 to the appropriate EI unit installation support flight.

- If the departing team chief must depart before the replacement arrives, a temporary team leader must be appointed from among the remaining team members. All job-related documents and accountable items will be given to the temporary team leader and turned over to the new team chief upon arrival.
- If the temporary team leader is not team chief certified, a certified team chief must be deployed as soon as possible to assume leadership of the team.
- If the temporary team leader is a team chief nominee awaiting initial evaluation and the remainder of the job is sufficient for certification, another team chief need not be deployed. The appropriate work center supervisor has the responsibility and authority to make this determination through the installation flight commander and the unit maintenance support function.

6.4.17.3. Document the team chief replacement on the original EI Team Chief Log.

6.4.18. Technical Order Improvement Reports , AFTO Form 22. Complete AFTO Forms 22 on TO discrepancies IAW TO 00-5-2. If assistance is required, contact the customer Quality Control office or home base QA. If a TO discrepancy is against equipment owned by the customer, submit

the AFTO Form 22 through the customer QC office. Submit other AFTO Forms 22 through your unit QA office. Always retain a file copy in the working project package folder.

6.4.19. Project Status Report. Accurate project status reporting to the home unit and the customer is extremely important. Frequency of team chief reporting varies according to job complexity and installation, support, and personnel problems encountered. The frequency of project status reporting to the home unit should be IAW local procedures. The customer should be updated on at least a weekly basis. AFMC Form 166, **Project Status Report**, may be used to track job status as follows:

6.4.19.1. Header Information. Usually the project manager/production controller initiates an AFMC Form 166 for each new project by filling in all known header information, to include project number, location, job description, team chief, etc. The form may be maintained and filled out electronically or in hard copy by the section supervisor, project manager/production controller IAW local procedures. A copy is also placed in the project package for the team chief to update prior to calling in and updating project status.

6.4.19.2. Personnel Information. Name and rank of the team chief and the correct names and ranks of all team personnel are entered in the appropriate sections of the AFMC Form 166. Especially important is contact phone numbers: both for TDY duty location and billeting. If unknown in advance, the individual updating the form enters contact information as soon as known or anytime numbers change.

6.4.19.3. Task Breakout. Prior to team departure, the responsible supervisor, or team chief, reviews the project package and on the remarks portion of the AFMC Form 166, lists the series of tasks to be performed. This breakout may follow the individual task instructions or may list the major portions of the job, such as installing racks, installing cable ladder, trenching 3,000 feet, pulling in 5000 meters of fiber, etc. The task breakout should depict, in chronological or logical sequence, the major tasks to be performed.

6.4.19.4. Percentage (%) Complete. As each task is completed, the team chief can update project status and have a good reference for calling status back to the home unit. Based on task completion, the supervisor or team chief can estimate the overall project percentage complete. The percentage complete is normally updated each week to provide EI unit managers with an accurate picture of project status.

6.4.19.5. Problem Areas. The bottom section of the AFMC Form 166 has a space for listing problem areas. While any team usually encounters a multitude of problems, the intent is to identify situations beyond the team chief's control which could impact project completion or adversely affect team members. Examples include materiel shortages, allied support incomplete, team members not receiving accrual payments, etc. Problems are identified with the intent of keeping the installing unit managers aware of undesirable situations and what's being done to correct them.

6.5. Pre-Deployment Actions.

6.5.1. AFMC Form 151, **Pre-deployment Checklist**. (See attachment 27). The Predeployment Checklist is initiated by the team chief's supervisor or applicable section chief by completing Section I. Units should add additional items to the checklist as needed. Once Section I is complete and all items annotated, the team chief complies with and annotates all applicable Section II items and then signs and dates the form. The completed checklist is filed in the team chief's project folder.

6.5.1.1. During the predeployment process the team chief initiates an AFMC Form 152, **Engineering Installation Team Chief Log** (see attachment 28) for each project. the AFMC Form 152 is a permanent record of all project actions; team chiefs will:

6.5.1.1.1. Record pertinent information on a daily basis, i.e. special safety briefings, leaves, job progress, problems encountered (even though the problem may have been resolved), changes in personnel, vehicle status, gas detector field checks.

6.5.1.1.2. Use plain bond paper or lined paper for EI Team Chief Log continuation entries. Follow the same format depicted in block 12 of the AFMC Form 152. Annotate the project number at the head of each continuation sheet and also include page numbers..

6.5.1.2. Ensure discrepancies recorded during the initial project review on the AFMC Form 150, **Record of EI Project Review** (see attachment 23) have been corrected.

6.5.1.3. Determine the adequacy of postal services near the work site before deployment. Explain personal mail options for the team (hold or forward).

6.5.1.4. Coordinate with the host base to confirm support will be provided to the installation team for emergency rescue from manholes (reference AFOSH STD 91-25.) prior to departure of a team that will work in confined spaces. If support cannot be obtained or confirmed, the installation team must take their confined space emergency rescue equipment. This request may be part of the Notification of Arrival (NOA) or by a separate e-mail.

6.5.1.5. Ensure a Notice of Arrival E-mail is sent to the host base plans and implementation (P&I) office. The NOA E-mail should be a confirmation of pre-coordinated support verbally agreed to by the P&I POC. Use the NOA Verbal coordination Record in Attachment 30 to record status of all support needed to implement the project. Use this information to structure the NOA E-mail. Send info copies of NOA to all agencies associated with the project as indicated in Attachment 31. Be sure to follow-up if there are any changes in NOA information.

6.5.1.6. Carefully review the project folder and the results of any previous survey that may have taken place. Ensure all deficiencies identified during the project review, which could impact project start and completion, are corrected. If major deficiencies were not corrected, coordinate with the project manager/production controller who will contact the customer to determine if the job should be started. Refer unresolved issues to the operations officer/production controller.

6.5.1.7. Review the project to determine test equipment, technical orders, and tools the customer is to provide the team during the installation or maintenance task.

6.5.1.8. Team chief may, in lieu of transporting test equipment, coordinate with the host base communication unit to obtain the required equipment necessary to complete the project. If the communications unit agrees to provide the test equipment, the team chief must ensure the equipment will be set aside and calibrated exclusively for the team's use during the entire duration of the project. Confirm this support in the NOA.

- If practical, authorized unit test equipment should be the first source of test equipment selection to ensure proficiency is maintained in the operation of UTC mobility assets.
- If during the TDY, calibration is performed on equipment and returned to the team chief, the team chief will notify the unit installations support flight so TMDE records can be updated.

6.5.1.9. Ensure gas detectors have been calibrated by checking unit documentation. Unit documentation will indicate gas detector serial number, date of calibration, who calibrated the detector, and if any parts were replaced. The gas detector must have a current calibration date before it can be used. Results of gas detector field checks will be recorded daily on Engineering Installation Team Chief Log.

6.5.1.10. If available the team chief should check out a laptop computer and digital camera for support use during project implementation.

6.5.2. Team Preparation: Team chiefs will brief all team members and ensure the following are completed:

6.5.2.1. Each team member knows the assembly location and the departure time, duration of the TDY, detailed travel itinerary, and alternate reporting procedures in the event of unforeseen circumstances.

6.5.2.2. Conduct an inspection to ensure:

6.5.2.2.1. Special clothing required is adequate and serviceable.

6.5.2.2.2. Individual and special tools and safety equipment are adequate and serviceable.

6.5.2.2.3. Safety training, specifically flight line training, pole top rescue, climbing certification and confined space rescue is up-to-date on all team members.

6.5.2.2.4. All team members AF Forms 623, **Training Records,** are available when deployed, as applicable.

6.5.2.2.5. All available qualification training packages are incorporated into daily training program schedule.

6.5.2.3. If a team member is due WAPS testing during the TDY period and wants to test for promotion, they should test before departure. If this is not possible, their supervisor will contact the unit WAPS monitor to reschedule testing, either on return from TDY or at the TDY location. WAPS testing is not applicable to ANG units.

6.6. Project Implementation.

6.6.1. Arrival. Upon arrival at the job site, Team Chiefs will:

6.6.1.1. Report to the billeting office and obtain quarters assignment. If quarters or rations were determined available at the TDY locations IAW AFI 34-246 and, on arrival, the quarters or rations were not provided to the entire team or a portion of the team, contact your supervisor and advise of the non-availability of billeting or messing.

6.6.1.2. Inform your unit and the local host base unit POC of local quarters address and phone number. Update this information, as necessary.

6.6.1.3. Contact the customer POC, normally the P&I function, and schedule an in-brief. Advise the P&I POC of which support agencies should attend the in-brief, such as customer quality control, maintenance project coordinator, chief of maintenance, BCE, safety, bio-environmental, etc.

- It is advisable to delay the in-brief until you have all the facts about the PSS (i.e., problems or support needed from the host base). If the in-brief can't be delayed, ask for a follow-on briefing after completion of the survey.

- When projects are to be on-site engineered, the team chief will still be solely responsible for the installation and administrative procedures. The on-site engineer will support and assist the team chief in the timely accomplishment of the project, by providing technical expertise and problem solving.

6.6.1.4. The team chief will in-brief the host Communications Systems Officer (CSO) (normally the base communications unit commander) unless the CSO specifically desires otherwise. The team chief will document in the Team Chief Log whom the request was made to and if the briefing was given or not.

6.6.1.4.1. When briefing the host base and customer personnel, prepare a checklist to ensure every aspect of the job is thoroughly covered. Have reference material arranged for quick reference in case you are asked a question about the equipment or facility. When preparing the briefing, determine the audience and tailor the contents for appropriate presentation. Suggested topics are:

6.6.1.4.2. Type of job

6.6.1.4.2.1. How the job will impact local systems and operations

6.6.1.4.2.2. Estimated duration of job

6.6.1.4.2.3. Support requirements

6.6.1.4.2.4. Downtime for any equipment or facility presently in operation

6.6.1.4.2.5. Acknowledge willingness for periodic customer Quality Control (QC) visits to the job site and explain that the unit QA may conduct periodic visits to the work site.

- The type and complexity of the job may determine which host base and customer personnel will be briefed.
- Contact QC and review the test plan for the project. This will help eliminate possible problem areas during the project acceptance.
- Be aware of the importance of securing your home unit approval before accomplishing any work requested by the customer which does not appear in the project package. The parent unit must ensure everyone is aware of the request and proper coordination/approval is obtained (i.e., STEM, section chief, installations officer, etc.)

6.6.1.4.3. While with the customer POC: (P&I or Maintenance Project Coordinator)

6.6.1.4.3.1. Arrange for access to the job site.

6.6.1.4.3.2. Arrange secure storage space for team tools, test equipment, and materiel.

6.6.1.5. If restricted area badges are required for the implementation team, coordinate with the security agency issuing badges to determine requirements for issue at the TDY location.

6.6.1.6. Contact or visit the following host base activities before beginning work:

6.6.1.6.1. Host base ground safety office and request a local industrial safety briefing pertaining to work to be performed. The team chief will obtain and brief the team on location, hours, and telephone numbers of ambulance service and hospital emergency room.

6.6.1.6.2. The communications unit safety representative should be contacted to receive any required briefings.

6.6.1.6.3. Host base bio-environmental engineering to determine if asbestos, PCB, and contaminated soil surveys have been accomplished for the job site. Do not begin work in an area suspected of having any contamination which might present a hazard to personnel or equipment until the area is checked by bio-environmental engineering and clearance to begin work is received IAW: Code of Federal Regulation 40 series, Resource Conservation Recovery Act. Request disposal instructions for any chemical waste materials which may be excess/residue to project actions i.e. paint, no-ox, encapsulant, etc. **Note:** Immediately notify your work center supervisor if any contamination is discovered and document specifics on the Team Chief Log. Your work center supervisor will provide further guidance.

6.6.1.6.4. If work will be near or on the flight line, check with the base flight safety office for local procedures to operate vehicles on or around the flight line.

6.6.1.6.5. For COMSEC jobs contact the base TEMPEST officer to determine if all criteria can be met.

6.6.1.6.6. Contact project P&I POC and materiel warehouse personnel to arrange for access to materiel for inventory and subsequent removal for transport to job site. **Note:** If you are installing equipment items, contact the applicable work center project coordinator to obtain the organization and shop codes under which the equipment was ordered. You will need these codes to give to the project warehouse custodian before you can remove the project equipment from storage.

6.6.1.6.7. If not previously accomplished, coordinate with the host base fire department to find out if they will provide manhole rescue. If rescue equipment is not available to the installation team, immediately notify your work center supervisor to obtain the equipment. Also, make arrangements to have compressed air tanks serviced by the base fire department for the manhole rescue equipment.

6.6.1.6.8. Coordinate with the host base P&I POC to obtain and process an AF Form 103, **Base Civil Engineering Work Clearance Request**, (Attachment 31) before starting any construction.

- Use AF Form 103 for any work, whether inside or outside a building, that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire or intrusion alarm systems, or routine activities of the installation. Also, use it to identify potentially hazardous work conditions in an attempt to prevent accidents. If delays are encountered and the conditions at the job site changes, the AF Form 103 must be reprocessed.
- If TDY to a non-US Air Force facility or installation, process a local work clearance request form or letter. Ensure the AF Form 103 format is followed when using a form or letter.
- The team chief must ensure all applicable safety practices are adhered to when construction work is being accomplished near power lines, utilities, or communications-computer systems cables. In the event multi-operations are in progress, the team chief will ensure safety precautions are followed by requesting assistance from the base or customer unit ground safety office. Request assistance from base civil engi-

neers (BCE) before starting construction work, including drilling inside structures, and when any questions exist concerning physical locations of hidden or buried civil engineering facilities or hazards.

6.6.1.6.9. While at BCE, the team chief will also check to see if any potential real property will become real property after installation and require the processing of DD Form 1354, **Transfer and Acceptance of Military Real Property**. (See Attachment 32).

6.6.2. Pre-Implementation Site Survey (PSS) and Implementation Assessment

6.6.2.1. Pre-Implementation Site Survey (PSS). The purpose of a PSS is to confirm the availability of all project materiel, ensure proper completion of allied support, the status of support facilities and to evaluate whether a project can begin and reasonably proceed to completion without a work stoppage.

6.6.2.2. Implementation Assessment (also known as a Circuit Rider). A special survey conducted to evaluate projects prior to the project manager/production controller issuing a workload release when large amounts of project materiel have been on-site for an extended period of time or require extensive base civil engineering support. Many of the same steps performed on a PSS are also conducted during implementation assessments; however, not to the same depth and degree and the team chief does not take possession of or sign for project materiel. *NOTE:* The team chief will provide detailed results, within 10 calendar days after completion of an implementation assessment to the project manager/production controller.

6.6.3. Procedures. Using the AFMC Form 153, **PSS Checklist** (See Attachment 33) as a guide, the team chief conducts the PSS as follows:

6.6.3.1. Review PSA and EPSA with the host base P&I POC to verify status of host base support requirements.

6.6.3.1.1. If a structure is being constructed to support the project, compare Beneficial Occupancy Date (BOD) to Team Start Date (TSD) to determine compatibility of schedules.

6.6.3.1.2. The project package siting and project installation data section will identify specific location reserved for equipment installation. If waivers are required for equipment placement, verify if customer has acquired the waivers. Also personally inspect reserved space to see if it is available for equipment placement.

6.6.3.2. Normally, project materiel is accounted for on the Chief of Supply (COS) records. The Responsible Property Officer (RPO) will provide a copy of authorizing orders to gain access to the materiel for inventory. The base supply project custodian will provide the shipping documents used to verify arrival of shipments. Make a box count and observe condition of containers. All discrepancies will be investigated and reported as outlined in paragraph 6.6.3.2.4. The RPO will sign all issue documents including those normally signed by the equipment custodian before materiel is removed from the project holding area. Keep copies (or a record of) shipping documents, receiving reports, packaging lists, equipment tags, etc. Documents or records must contain sufficient data to permit tracer or follow-up action (government bill of lading, shipping manifest number, registered mail number, etc.) if required.

6.6.3.2.1. Do not destroy reusable containers. Turn them in to the base COS or TMO. Determine local requirements for disposition of wooden cable reels; i.e., will DRMO accept them or you will need to break them down and dispose of as scrap wood.

6.6.3.2.2. Retain all project materiel documentation in the project folder. This documentation may be required when submitting a materiel deficiency report. **Note:** If facilities and methods used for storage of project materiel are inadequate, document findings on the Team Chief Log. Attach photographs for clarity and proof. Pay particular attention to outside storage in open or unsecured areas and to the storage of project materiel in separate physical locations. After all resources have been exhausted and storage is inadequate to the extent that damage could occur to project materiel, contact the customer P&I POC and/or the project manager/production controller for assistance.

6.6.3.2.3. Perform an item by item inventory of all project materiel. Compare the inventory to the LOM to determine if all required materiel is on hand and if substituted materiel is suitable. Resolution of materiel discrepancies, such as shortages, unsuitable substitutes, incorrect counts, incorrect MCL, misidentification of parts, etc., will depend upon the source of supply. If customer supplied, notify customer P&I for corrective action. If supplied by GSA or a civilian vendor, contact them and provide information necessary for reshipment or resupply. Always keep the customer P&I and project manager/production controller aware of materiel discrepancies and potential impact on the project. **Note:** The team chief will ensure that each item is visually inspected for completeness, serviceability, and suitability. If substitutions have been made for LOM items, determine suitability. If suitability cannot be determined, contact the project engineer for assistance.

6.6.3.2.3.1. Discrepancies with materiel procured through the standard base supply system (SBSS) should be immediately identified to the base supply receiving section. Coordinate with the receiving section to determine the nature and cause of discrepancies and the proper method of formally identifying discrepancies, such as initiation of a Report of Discrepancy (ROD) or Transportation Discrepancy Report. Local assistance may also be obtained from the customer Quality Control section. Be sure to identify serious discrepancies, those impacting project start/completion, to the customer P&I and your project manager/production controller.

6.6.3.2.3.2. Do not accept responsibility for materiel from base until corrective action is properly documented. If discrepancies are discovered after acceptance, immediately notify base supply and pursue same method of correction.

6.6.3.2.3.3. Command assets (end items of equipment controlled via CA/CRL) remain the property of the using command and at no time will team chief accept accountability for them. Check all command assets for TO completeness, including Time Compliance Technical Orders (TCTO). Also, verify the availability and completeness of TCTO kits. If TCTO kits are not available on site, notify the project manager/production controller. If unauthorized modifications are installed, inform customer that the modification must either be approved IAW DODI 5000-2AFSUP1 or removed and the equipment returned to specifications prior to implementation start. If the equipment is awaiting parts (AWP) or awaiting maintenance (AWM) thoroughly document this on the PSS Checklist and the Engineering Installation Team Chief Log. **Note:** On completion of inventory, or if you must leave the base warehouse, repack and reseal all containers before departing area. If banding of containers is required, and the warehouse doesn't have a banding machine, contact base supply packing and crating for assistance. NEVER LEAVE OPEN CONTAINERS IN THE WAREHOUSE.

6.6.3.2.4. If additional materiel is required due to engineering problems or a change in requirements, the team chief will coordinate with the project engineer.

6.6.3.2.4.1. When the project is a No-Go or a delay is anticipated due to lack of materiel which cannot be obtained from the local support base supply, local purchase, or from original supplier, notify the customer P&I office, your section, and the project manager/production controller. Always indicate the projected date materiel shortage will impact the project.

6.6.3.2.4.2. Be sure to record all known information concerning materiel shortages. Complete information, (i.e.; boxes open before team arrived, wrong item sent, materiel damage in transit, materiel damaged by warehouse worker, etc.) allows decisions to be made concerning actions required to correct the discrepancy and to prevent similar discrepancies in the future.

6.6.3.3. For first time installation of a major end item on a base, an initial spares support list (ISSL) will be established by AFMC. Check to see if the customer has established an ISSL and determine the percentage of fill and the estimated fill date. The ISSL will temporarily support the end item between installations completion and establishment of supplies for the logistic supportability of the new major end item. *NOTE:* Although the purpose of the ISSL is to temporarily support the end item upon completion of the installation, the ISSL may be used by the EI team as a source of supply to ensure smooth installation and check out IAW AFMAN 23-110.

6.6.3.4. Process or request any necessary ECR/As so they may be formalized prior to start of implementation.

6.6.3.5. Perform a thorough review of the work site and project data, simulating proposed installation.

6.6.3.6. Document the results of the PSS and implementation assessments on the PSS Checklist.

6.6.3.6.1. Provide a copy of the completed AFMC Form 153 to the host base P&I activity and file original in the team chief job folder.

6.6.3.6.2. Contact your work center supervisor, project manager/production controller, and customer P&I if problems are encountered. Ensure the following information, as a minimum, is addressed:

6.6.3.6.2.1. Problem areas.

6.6.3.6.2.2. Recommended corrective actions.

6.6.3.6.2.3. Impact if the problem is not corrected.

6.6.3.6.2.4. Change in any funding issue and man-hours.

6.6.4. Types of Projects. Most projects performed by EI are installations; however, the several different types of projects drive the actions the team chief must take. Following are special considerations and procedures for the various types of projects:

6.6.5. Removals.

6.6.5.1. The customer must contact the item manager for disposition instructions of end items for removal projects.

6.6.5.2. Before implementing a removal project, ensure a serviceability inspection is performed by the communications unit and documented if removed equipment is slated for re-use according to disposition instructions. The communications unit also is responsible for unit level repair, as required, condition tagging, and providing any packing lists required.

6.6.5.3. If the equipment was certified serviceable or repairable, complete the removal according to the project package and provide proper disposition.

6.6.5.4. If advance disposition instructions require items to be sent to the Defense Reutilization and Marketing Office (DRMO), the customer will prepare the supply turn-in documents.

6.6.5.5. Contact the customer to arrange for packing, crating, and local transportation and shipment of the equipment. This is the responsibility of the host command IAW AFI 33-104.

6.6.5.6. Have the following available when you request an acceptance inspection:

6.6.5.6.1. Annotated project drawings and removal instructions.

6.6.5.6.2. A completed copy of each , Equipment Inventory.

6.6.5.6.3. AF Form 1261, associated documents, and serviceability inspection results.

6.6.6. Relocations. A relocation project combines procedures for removals and installations in the same project. Existing equipment (command assets) is removed from its present location and reinstalled at another location under the same project number. Before implementing the removal phase of a relocation, perform and accurately document results of a joint serviceability inspection, with a communications unit (preferably QC) representative, on all equipment to be reinstalled on the project.

6.6.7. Classified Projects. When tasked to implement a project of which any portion is classified, use caution when making entries on any document to avoid a security violation. Some basic rules to protect the team chief are listed below; however, if any doubt exists, consider the information classified and check with the unit security officer. Control classified documents IAW AFI 31-401.

6.6.7.1. If an AF Form 1146 requires changes to a classified blueprint, photos, drawings, or attachments, ask for assistance from the customer security officer in classifying the materiel and determining the method to be used to send correspondence to your unit.

6.6.7.2. Do not discuss a subject on the telephone or include it in an unclassified message if in doubt as to its security classification.

6.6.7.3. Always be sure of the steps you intend to take to accomplish paperwork or transmit data that may be classified. If you are not sure and cannot locally resolve the problem, classify your work until you receive competent guidance to do otherwise.

6.6.7.4. If a project exception reveals a security weakness, the completion certificates will be classified.

6.6.7.5. Any specific guidance and instructions received will be in writing and classified, as necessary.

6.6.8. Project Procedures.

6.6.8.1. Regardless of the type of project, there are similar elements central to successful completion as briefly discussed below.

6.6.8.2. Planning. There is no substitute for thoroughly planning how your team will complete the project. The more complex the project, the more planning required.

6.6.8.3. Long term planning involves projected estimates of when each phase of the project, assuming allied support, materiel, installers, and access to the job site is available, will be completed. Attachment 34 is a good example of a time line you can develop for your use, to give to the customer, and to share with team members. Be sure to include team members in on the planning stage; this will give them a stake in the project. Remember: informed teams members will usually be more involved in the project.

6.6.8.4. Short term planning is something you will do daily, or perhaps every evening to map out the next day's events. This may encompass work completion goals, listing whom you must contact, problems to overcome or simple work assignments. Begin each day with a team meeting. Work off your long term schedule to make short-term adjustments. Keep all team members up-to-date.

6.6.8.5. Flexibility is of the key to EI success. No matter how sound your planning, more than likely, some obstacle will arise to throw you off schedule, require a little overtime, and possible require adjustments to your long-term plan. Three important elements here: (1) readjust your plan as necessary, (2) keep the customer well-informed of adjustments and their cause, and (3) don't work your team to death to compensate for situations clearly beyond your control.

6.6.8.6. Close and continued coordination with all base support functions is another must for timely and efficient completion of projects. You must keep your P&I POC, as will as the maintenance activity, QC, and CSO current on project status, current and/or anticipated problems that could impact completion dates. Keep the customer and project manager/production controller fully informed of project status at all times.

6.6.8.7. Training EI team members is an ongoing process that must be given number 1 priority. Both active duty and ANG personnel continuously turn over. You must build training into your long and short term planning. If not, the next project down the road may not have any qualified technicians. Even if a day or two has been added to project duration at customer expense, you must do so!

6.6.8.8. Funding: If cost estimates are erroneous, or project delays occur, it's quite possible obligated funding may be insufficient to complete the project. If this situation occurs, notify the project manager/production controller as early on as possible. The project manager/production controller is responsible to obtain funding—not the team chief. Keep the customer informed but let the project manager/production controller coordinate funding.

6.6.8.9. Safety is mentioned throughout this instruction, but it's useless unless the team chief strictly enforces safe practices AT ALL TIMES. This includes wear of protective equipment, proper use of tools and equipment, adhering to vehicle operating procedures, watching out for each other, and just plain application of everyday common sense. A team chief not involved in team safety is not worthy of the title.

- Identify the locations of applicable circuit breaker boxes. The team chief will ensure that all team members are aware of the locations prior to commencing any work action. Use lockout devices when necessary.

- Ensure all manholes are classified and working gas detectors are used to check prior to entering confined space.
- Ensure safety boards and equipment are available at all work locations.
- Make sure safety climb devices are in place and approved safety harnesses are used

6.6.8.10. Involve the customer in the project from day one. Customer P&I, as-well-as the section who will assume maintenance responsibility, has certain obligations to support EI teams. Teams chiefs need to know these support requirements. P&I responsibilities are identified in AFI 33-104. Maintenance responsibilities are spelled out in AFI 21-116. Attachment 35 contains AFI 21-116 support responsibility excerpts. Know what the customer is supposed to do for EI. If support is lacking, request, in diplomatic fashion, they fulfill their duties. Be sure to let the Chief of Maintenance or Chief of Systems know you'd like to provide weekly project status briefings in conjunction with their maintenance or staff meetings.

6.6.8.11. Historically, the two biggest project show stoppers are allied support and materiel deficiencies. Because of customer funding, project NO-GOs are almost a thing of the past. A good in-depth PSS goes a long way in identifying problems up front. If discovered during the course of the project, be sure to alert the customer, project manager/production controller, and your section as early on as possible. A well-thought out estimate of when the support deficiency will impact the project is essential in obtaining timely assistance. Be sure to include the following info in your project deficiency e-mail:

6.6.8.11.1. Addresses of PM, Engineer, your Section, customer P&I, customer project monitor, and any other personnel involved in the project.

6.6.8.11.2. Specific information about cause. If materiel, provide all stock numbers, number of items, nomenclature, cost data, etc. If allied support, description of what must be done and coordination accomplished.

6.6.8.11.3. Always include how and why the discrepancy impacts and if there can be workarounds.

6.6.8.11.4. Always give the estimated date of impact and what the impact will be.

6.6.8.12. Accurate documentation is an important element in managing projects. Be sure to record all pertinent information on the Team Chief Log. Also, update drawings as you go rather than waiting to the last minute.

6.6.8.13. When items are required and not on the LOM, the team chief will coordinate materiel requirements with the engineer to obtain a supplemental LOM. This includes additional quantities of items previously called out.

6.6.9. Leaving a Project Before Completion.

6.6.9.1. Secure equipment and materiel before leaving the job sites.

6.6.9.2. Take photographs of partially installed, removed, or relocated equipment to verify its condition prior to departure.

6.6.9.3. Annotate drawings and work statements to reflect work completed. Jointly inspect all completed work with the customer to determine condition. Put your name and the date you are leaving the job site on all working drawings.

6.6.9.4. Prepare a Letter of Agreement (LOA) between you and the customer. (See Attachment 36, Sample)

6.6.9.4.1. Indicate areas the work accomplished was or was not found acceptable.

6.6.9.4.2. List exceptions or deficiencies.

6.6.9.4.3. Include an estimated date for resumption of the project. Contact your supervisor for guidance on making this determination.

6.6.9.4.4. You and the customer's representative (usually P&I POC) will sign the LOA. Leave one copy of the project package, and drawings with the customer.

6.6.9.4.5. File one copy of the LOA in the project folder.

6.6.9.5. Package all materiel not installed and provide the host base project monitor with a current inventory. An updated materiel listing is returned to the project location monitor with the remaining project materiel.

6.6.9.6. The base or site host provides protection for partially installed equipment, on site and not installed, installation team tools, and equipment left on site IAW AFI 33-104. All equipment and supplies will be transferred (use AF Form 1297) to a representative designated by the base or site host and will be released only on written approval of the RPO.

6.6.9.7. Include a complete narrative report on the Team Chief Log on the status of uninstalled materiel and equipment for the project.

6.6.9.8. Return 2 sets of drawings, the project package, all correspondence, and the Engineering Installation Team Chief Log to your unit.

6.6.9.9. Upon return to the job site, make a 100% item-by-item re-inventory.

6.6.10. Testing C4 Facilities and Systems.

6.6.10.1. The engineer is responsible for including a test plan in the project package.

6.6.10.2. Project testing is accomplished in three phases: pre-shakedown, shakedown, and operational tests. Shakedown and operational tests are required to ensure the equipment or system is functionally capable of performing the operational mission. The results of the tests will become a part of the final acceptance documents.

6.6.10.3. If deficiencies are encountered which cannot be resolved during testing, contact the project engineer for guidance. Also request local assistance from the customer QC section.

6.6.10.4. Maintain a worksheet or log that includes test data, final facility alignment, data recordings, oscilloscope photographs, record of part failures, and other data if required by testing instructions in the project package. AFMC Form 159, **Installation/Acceptance Testing** or AFMC 164, **Fiber Optic End to End Attenuation Test**, may be used to record cable plant test results. Always provide the customer with a copy of test results and file one copy in the project folder"

6.6.10.5. When the project is being accomplished within a facility or system already operational, keep the C4 Systems Officer (CSO) and chief of maintenance advised of progress and plans to proceed. Test each phase of the work.

6.6.10.6. If special QC inspections are required where continued job progress would prevent performing a thorough inspection upon completion of the project, give advance notice to QC to pre-

vent job delay. If QC elects not to perform an inspection, annotate on the Team Chief Log and continue with the job. Get copies of the inspection documents and give a copy to your unit QA office. File your copy with the completed job folder. If the QC inspection reveals a problem, correct it, if possible, and request the QC activity to re-inspect the item concerned.

6.6.10.7. If electromagnetic interference threatens to prevent successful testing and acceptance, advise the engineer and the work center supervisor.

6.6.10.8. Customer funding of XD and XF ERRC coded Depot Level Repairable (DLRs) may be required to support testing/commissioning efforts described in section B-TAB B, technical information. Customer funding is required accordingly. This relates to XD and XF ERRC coded items determined to be defective, or that fail during tests/tuning efforts. The customer's responsibility for this funding should be affirmed in the PSA. Also include appropriate statements relating to this funding responsibility in the "notice of arrival message," to include a request that the resource adviser be reminded of the potential funding requirements.

6.6.11. Flight Inspections. The FAA will perform flight inspections to verify a newly installed or modified ATCALS system is operating according to specifications. Before requesting the final flight inspection, ensure that all alignments, tests, QA evaluations, and QC inspections (which will affect the flight inspection) are completed. Team chiefs will coordinate with the local communications unit to make advance requirements known to the flight inspection activity as early as possible. Tentative dates are acceptable for planning aircraft schedules. Firm dates should be provided at least 7 days before inspection is required (IAW: AFMAN 11-225).

6.6.12. Product Quality Deficiency Report (PQDR). A PQDR is required when deficiencies on hardware, software, mission critical computer system, vehicles, clothing and textiles are discovered (IAW TO 00-35D-54). If, during the course of the project, you discover an equipment deficiency that may warrant a PQDR, coordinate with customer QC to complete necessary documentation. Turn the defective item over to the customer QC.

6.6.13. Project Drawings. (See paragraph 6.4.15.3 to properly annotate project drawings.)

6.6.13.1. If changes to schematic diagrams are required, reflect the changes and return copies of changed diagrams with the "actual-as-installed" drawings.

6.6.13.2. When on-site engineering is performed, it may become necessary for changes to be made to the project drawings or installation instructions. When this occurs, the on-site engineer will prepare an AF Form 1146 documenting the action, and will also annotate and sign the affected drawings or installation instructions. The engineer will annotate all documents and will solve all technical problems before departing the job site IAW Chapter 5 of this publication.

6.6.14. QA Evaluation and QC Inspection.

6.6.14.1. The EI unit Commander, Installations Flight Commander, operations officer, or team chief, determines if a pre-implementation or in-progress QA evaluation is needed.

6.6.14.2. QA evaluations should be prearranged prior to team departure. During the course of the project, the team chief provides as much notice as possible to enable QA to schedule evaluation dates.

6.6.14.3. The team chief must perform a "self evaluation" on each project using AFMC Form 154, **Quality Assurance Evaluation Report** (see Attachment 37).

6.6.14.4. The team chief makes the following documents available to QA and QC personnel:

6.6.14.4.1. Annotated project drawings, installation instructions, and design performance standards (if final QA evaluation, certified drawing, documents, etc.).

6.6.14.4.2. Cable distribution sheets.

6.6.14.4.3. A draft copy of the AF Form 1261 jointly prepared by you and the local programmer (if final QA inspection).

6.6.14.4.4. An itemized list of excess or residue LOM.

6.6.14.4.5. Equipment performance records, test data sheets, and recordings of tests conducted during the installation or checkout. Operational test logs, including the Pressure Test Record T-1, if applicable, an itemized part failure list, and applicable deficiency reports.

6.6.14.4.6. A report from the appropriate medical office when radiation certification is required by the project package.

6.6.14.4.7. Profiles of radio frequency radiation indicating the personnel hazard limits (10mw/cm2), when radio frequency hazard certification is required. Drawings and instructions will be provided in the project package.

6.6.14.4.8. Radio frequency radiation profiles relating to fuels and ordnance hazard boundaries, when applicable. Drawings and instructions will be provided in the project package.

6.6.14.4.9. A copy of each applicable Standard Installation Practices Technical Order (SIPTO).

6.6.14.4.10. DD Form 1354, if applicable.

6.6.14.4.11. A copy of each approved ECR/A.

6.6.14.4.12. A copy of drawing transmittal letter.

6.6.14.4.13. For EI unit QA only:

6.6.14.4.13.1. A copy of each AFMC Form 152.

6.6.14.4.13.2. Training Records for each military team member, as required.

6.6.14.4.13.3. Your project (self-evaluation) AFMC Form 154 with listed discrepancies you identified. List deficiencies on bond paper.

6.6.15. Project Completion. Use AF Form 1261, **C4 Acceptance Commissioning and Removal Certificate** and the AFMC Form 155, **Post Deployment Checklist,** to accomplish all project completion actions (see Attachments 38 and 39). The team chief will:

6.6.15.1. Coordinate with the local QC on their inspection requirements. The QC inspection, during the operational test, is to verify acceptability of equipment and installation. A joint inspection team IAW AFI 33-104 will perform it. If minor exceptions exist, ensure thorough explanations of deficiencies are included on AF Form 1261. Identify the activity responsible for correction.

6.6.15.2. When a major exception would impact successful system operation, a Letter of Agreement would be completed if the team was required to depart. Refer to AFI 33-104. **Note:** TCTOs not completed will be listed as a minor exception on AF Form 1261, if equipment meets opera-

tional requirements. If unaccomplished TCTO is an organizational level modification, the correcting activity will be the customer.

6.6.15.3. Coordinate with the local P&I POC to prepare a draft copy of AF Form 1261 (Perform Pro automated format may be used). See AFI 33-104, Chapter 5, and reverse of the form for instructions on completion of AF Form 1261. After final copy is completed, ensure the accuracy of entries on the form. Process the document for signatures in accordance with AFI 33-104. After required signatures (blocks 10a thru 10d) are obtained, leave original with local programmer, send a copy to the project manager/production controller, file a copy in the project folder, and send a copy to your unit production control through your systems installations flight officer.

6.6.15.4. Complete part I of the AFMC Form 155, **Team Chief Post Deployment Checklist,** prior to departing the job site.

6.6.15.5. Prior to departing the job site, the team chief annotates three copies of the project drawings (CSIRs) to reflect all changes resulting from the project.

6.6.15.5.1. As specified in AFI 21-404, Developing and Maintaining Communications and Information Systems Installation Records, the team chief provides two copies of the updated drawings along with a transmittal cover letter (see Attachment 40) to the base CSIR manager. The base CSIR manager retains one copy and forwards the other copy to the 38 EIG Engineering Data Service Center (EDSC) to permanently update the affected CSIRs.

6.6.15.5.2. The team chief files a copy of the transmittal letter and the third copy of the updated CSIRs in the project folder.

6.6.15.6. Upon return to home station, the team chief turns in the project folder, and all accompanying documentation to the applicable section chief for review. Once the project folder is validated as complete, it's forwarded to the project manager/production controller for filing and future reference.

6.6.16. Transfer of Accountability: Transfer of accountability is executed when the AF Form 1261 is signed by the base Chief of Supply (COS) or designated representative. Minor exceptions on the form will not preclude the processing of transfer of accountability. This equipment is controlled according to procedures outlined in AFMAN 23-110, Volume IV. The AF Form 1261 will reflect only that COMSEC equipment which was picked up on the customer's account number.

6.6.16.1. If circumstances arise that the customer has a requirement or operational need for a piece of equipment or portion of the installed project, prepare a Letter of Agreement (LOA) identifying the equipment by serial number if available; if not, provide a description. List specific test data. Include a statement of acceptance by the customer for custodial and maintenance responsibility. The letter will be signed by you, the customer, the QC representative, and the host base CSO. This letter will serve as an interim document until the AF Form 1261 has been signed. File a completed copy of the LOA in the project folder.

6.6.16.2. Transfer of accountability for non-expendable items to base supply will be accomplished on AF Form 1261 when the COS or designated representative enters the base stock record account number and the receiving organization's document numbers in block 9F of the AF Form 1261 (reference: AFMAN 23-100, Volume II, part two, chapter 35). Accountability for equipment items installed is transferred with the signing of the AF Form 1261 by the base COS or a designated representative.

6.6.16.3. Transfer of real property, i.e. towers, buildings, and telephone poles identified during the PSS to the host BCE is by DD Form 1354. The real property items will be listed on the form. Attach the finalized DD Form 1354 to the AF Form 1261.

6.6.16.3.1. The host BCE or designated representative is required to accomplish an acceptance inspection of installed real property. Coordinate the acceptance inspection date with the BCE or designated representative in advance. If there is any disagreement, contact your supervisor.

6.6.16.3.2. The BCE signs block 28 of the DD Form 1354 and provide a voucher number for block 29. If an item is incomplete, indicate this in block 26 and explain the action to be taken, responsible agency, and estimated date of correction in block 30.

6.6.16.3.3. Complete block 27 as the EI representative.

6.6.16.3.4. In the case of off-base installations, the signature of the customer representative is required in block 31.

6.6.16.3.5. At certain missile and communications sites, there may be a Site Activation Task Force (SATAF) commander responsible to sign and account for all real property until all systems are complete. This individual signs in block 28. No further signatures will be required.

6.6.16.3.6. Individuals signing block 28 on the DD Form 1354 will be provided a copy of the document after all signatures are obtained. The local programs office and the appropriate EI project manager/production controller will be provided one of these copies along with other completion documents.

6.6.16.3.7. Normally, the DD Form 1354 transfer will take place simultaneously with the signing of AF Form 1261 or, within 30 days thereof.

6.6.17. Excess or Residue Project Materiel. Disposition procedures for excess or residue materiel are dependent upon source of funding. Normally the immediate customer or MAJCOM funds for all upward directed projects. Downward directed projects are normally AF funded.

6.6.17.1. For upward generated projects, query the appropriate chief of maintenance, superintendent or designated representative, who will identify what serviceable materiel, if any, they want to retain.

6.6.17.2. For downward directed projects, contact the project manager/production controller for disposition instructions. In many cases, project residue will still be turned over to the customer unless earmarked for other like projects.

6.6.17.3. Cable, FSC 6145 and 6015, will be reported by continuous lengths in feet or meters respectively. Any manufacturer's test data must remain attached to the cable. Ensure those items wanted by maintenance are identified to the original source of purchase, plus the name of the project manager/production controller.

6.6.17.4. Turn-in condemned property, damaged metals, cable reels, and scrap to DRMO. Dispose of wooden reels and hazardous materiel in accordance with local base policy (reference paragraph 6.6.3.2.).

6.6.17.5. Quantities of items less than the designated unit of issue are not turned in to supply nor reported as residue. These may be turned over to the local communications unit maintenance

activity or retained by the EI unit. Otherwise, these items are turned in to DRMO (IAW AFMAN 23-110, Vol I, Part One, Chapter 3, paragraph 52).

6.6.17.6. Prepare an excess/residue project materiel list (use the same format as the LOM) identifying all remaining residue including empty reusable steel cable reels. Keep copies of all documents in your project folder which relate to transfer of accountability of materiel and equipment.

6.6.17.7. Customer Outbrief: The final step prior to departure for home station is to conduct a courteous and professional outbriefing to the same representatives you inbriefed at the start of the project. Outbriefing subjects include:

6.6.17.7.1. Narrative of how the project went; resolution of problems

6.6.17.7.2. Recognition of individuals who provided outstanding support

6.6.17.7.3. Technical recommendations for system or equipment follow on maintenance and support

6.6.17.7.4. Leftover project materiel disposition

6.6.17.7.5. Identification of exceptions and correction responsibility

6.6.17.7.6. Explanation of unit capabilities for future workload

6.6.18. Post Deployment. The term "post deployment" applies to the steps and actions that follow the completion of the primary work mission of the team at the work location. This includes preparation for return to home unit, enroute considerations, and arrival procedures. Before departing the TDY work location, the team chief initiates the AFMC Form 155, (attachment 39) and completes all requirements listed on the form.

6.6.19. Team Departure. The team chief's responsibilities until returning to home station is all encompassing. The team chief ensures:

6.6.19.1. Transportation, housing, messing, training, logistical, and administrative needs are satisfied.

6.6.19.2. The team's conduct and bearing reflect favorably on the Air Force.

6.6.19.3. Safeguarding of vehicles and equipment while traveling. **Note:** Failure to adequately protect equipment from theft or loss may result in pecuniary liability being established against the person who signed for the equipment. The team chief will immediately report all losses or thefts to appropriate military or civil authorities and their supervisor. The team chief will obtain a copy of all reports submitted or received regarding losses or thefts.

6.6.20. Unit Inprocessing: Upon arrival to home duty station follow the Post Deployment Checklist and local procedures to inprocess the unit, turn-in vehicles, tools, and equipment, and inbrief the installations flight commander/chief.

6.7. Maintenance Requirements.

6.7.1. General. In addition to projects, EI teams are subject to perform certain maintenance and technical assist functions and antenna Preventive Maintenance Inspections (PMIs) as spelled out in the Air Force Technical Order 00-25-108. **Note:** Prior to departing on any maintenance requirement, the applicable section chief and team chief should review and become familiar with TO 00-25-108, Sec-

tion III. The team chief should have a copy of this TO on hand when performing any type of maintenance or PMIs.

6.7.2. Maintenance and Technical Assistance. Maintenance and technical assistance is limited to restoration of service only. Your responsibility is the repair or replacement of parts or components necessary to return the system to the condition that existed prior to the unexpected or imminent failure.

6.7.2.1. Emergency maintenance may be necessary to repair inoperative Air Traffic Control and Landing System (ATCALS) facilities, and vital communication links with no backup capability.

6.7.2.2. Urgent and Routine Maintenance involve impaired C4 systems or situations when the maintaining unit does not possess organic repair capability.

6.7.2.3. Procedures. Maintenance and technical assistance requests usually originate at the base or unit experiencing C4 maintenance difficulties. Request for maintenance and technical assistance are submitted IAW TO 00-25-108 through the parent MAJCOM.

6.7.2.3.1. When assigned to provide maintenance or technical assistance, the EI team chief should contact the requesting unit to determine the nature of the problem, type of equipment, and any other information which can be used to assemble the best repair team and bring along any needed TMDE, tools and technical data.

6.7.2.3.2. Urgency of the requirement will dictate response time. Always attempt to gather as much information as possible before departing. Out process and in process the unit IAW local deployment procedures.

6.7.2.3.3. At the job site, maintain a Team Chief log and follow the same general team management procedures when coordinating with the customer, base support units, and your home unit.

6.7.2.3.4. On completion of the maintenance or technical assistance prepare completion documents IAW TO 00-25-108, and out brief the customer prior to departure for home station.

6.7.3. Outside Plant Cable and Antenna Maintenance Requirements. Similar to maintenance and technical assistance, cable and antenna sections may be requested to evaluate and perform major maintenance on cable distribution or antenna systems. Again, this type of work is generally beyond the ability of the local O&M community. TO 00-25-108, Section III, provides specific instructions on EI team actions and administrative requirements.

6.7.3.1. Upon arrival at the TDY location, request an interview with the customer's commander, chief of maintenance, and plans and implementation flight representative. Brief them on the purpose of your visit. Your briefing will consist of, but not be limited to, the following:

6.7.3.1.1. Review AFTO Form 229, Cable/Antenna Maintenance Requirements, Validation and Accomplishments.

6.7.3.1.2. Coordinate required downtime and circuits affected.

6.7.3.1.3. Coordinate required administrative support.

6.7.3.1.4. Coordinate your work schedule. Normal shift support will be 8 hours a day, 5 days a week.

6.7.3.1.5. Request a maintenance coordinator be assigned as QC monitor and to identify deficiencies or exceptions. Resolve problems on the spot, if possible.

6.7.3.2. During the course and upon completion of repair actions, closely follow the instructions in TO 00-25-108. Ensure all administrative actions are complete to your and the customers satisfaction. Prior to departure, outbrief the customer to include plans for any necessary follow on maintenance or repair actions.

6.7.4. Antenna PMI Program. EI units may be tasked to perform antenna PMIs. The 738 EIS administers the antenna PMI program and distributes PMI schedules to affected EI units prior to the start of each fiscal year. EI units should review the schedule and plan for proper utilization of personnel resources as necessary to perform assigned PMIs. Procedures and administrative requirements involved with PMIs are detailed in TO 00-25-108.

Chapter 7

ENGINEERING INSTALLATION QA PROGRAM

7.1. Introduction. This chapter establishes the Engineering Installation Quality Assurance (QA) Program under the provisions of AFI 63-501. It provides the policy and guidance necessary to carry out the EI QA program

7.1.1. General.

7.1.1.1. EI Quality Assurance evaluates the quality of engineering, installation, program management, logistic support, workmanship, and safety. Quality Assurance Evaluators reinforce quality installation practices, recommend improvements, demonstrate proper procedures, and collect installation data that identifies positive and negative trends. Quality Assurance evaluations focus on product quality, customer satisfaction, and continuous process improvement of Engineering Installation (EI) procedures and processes.

7.1.2. Policy.

7.1.2.1. A Quality Assurance (QA) program will be established within each EI squadron.

7.1.2.2. Unit commanders are responsible for the effectiveness of the QA program within their units. It is strongly recommended that the QA function report directly to the unit commander.

7.1.2.3. QA must be staffed with highly qualified personnel capable of evaluating the entire EI process.

7.1.3. QA Objectives.

7.1.3.1. Support management in providing quality products through the use of quality improvement tools.

7.1.3.2. Collect data in all areas of engineering, program management, and installation processes and provide analysis to management.

7.1.3.3. Evaluate team chiefs and nominees in support of the team chief development program.

7.1.3.4. Identify, make recommendations, and provide assistance to solve problems with safety, engineering installation, logistic, workmanship, and training deficiencies.

7.1.3.5. Develop and implement a trend analysis report , used by unit management for analysis, capable of compiling data covering all phases of project evaluations, team chief certification evaluations, training effectiveness assessments, and customer satisfaction questionnaires.

7.1.3.6. Perform quality assurance evaluations and assessments to collect data on projects and training.

7.2. Organization and Responsibilities.

7.2.1. Quality Assurance Responsibilities.

7.2.1.1. Assign highly qualified, motivated, and experienced certified EI team chiefs to the QA function. Within manning constraints, QA personnel must be in the grade of TSgt or above. QA personnel must be among the most qualified in their career field and must have completed the following training:

7.2.1.1.1. Applicable Lightening Force orientation and standard installation practices.

7.2.1.1.2. EI QA Qualification Training Package QTP 2EXXX-201X.

7.2.1.1.3. Team Chief Course.

7.2.1.1.4. Obtain SEI-200 Designation.

7.2.1.1.5. EI Project Engineering Course.

7.2.1.1.6. TEMPEST installation training if evaluating secure communications.

7.2.1.2. Air National Guard (ANG) EI units will appoint a full-time technician who will be available on a daily basis to function as a liaison with Regional QA Committee concerning QA matters. ANG units will provide the Regional QA Committee with name of current QA liaison in January of each year and when changes occur.

7.2.1.3. Perform project evaluations, team chief evaluations, and training effectiveness assessments.

7.2.1.4. Perform periodic Project Package Reviews or upon request from the installations or engineering flight.

7.2.1.5. Fully train newly assigned QA personnel. Newly assigned personnel will accompany an experienced QA evaluator on at least one field trip before being tasked to proceed independently. QA evaluators must be able to explain and demonstrate proper QA evaluation techniques.

7.2.1.5.1. Document QA Certification.

7.2.1.5.2. File QA certification on AF Form 623 (or CAMS) as a permanent record of training.

7.2.1.6. Disseminate, collect, and review Customer Satisfaction Questionnaires (CSQ). Compile questionnaire data to identify trends. Recommend actions to correct negative trends and sustain positive trends.

7.2.1.7. Complete unit trend analysis reports IAW standard procedures.

7.2.1.8. Process, track, and follow up to closure Product Quality Deficiency Reports (PQDR) and Technical Order System Publication Improvement Reports and Replies (AFTO Form 22) submitted through the EI unit.

7.2.1.9. Make recommendations to Project Engineering for establishment or revision of standard installations practices or drawings.

7.2.1.10. Control and issue quality assurance stamps, if used.

7.2.1.11. Provide assistance and/or cross feed to other EI units on quality issues, concerns, and deficiencies in the areas of engineering, installation, logistics, workmanship, training, and safety.

7.2.1.12. Provide feedback for QA evaluation guides and checklists. Forward feedback for guides and checklist to the QA Committee for recommendations for inclusion in these publications.

7.2.1.13. Coordinate with engineering, logistics, and project manager/production controllers to resolve deficiencies identified by customers.

7.2.2. Quality Assurance Augmentation. QA evaluators from other units may augment the installing unit by performing required evaluations. The installing unit is responsible to initiate the augmentation request and provide funding. Augmentation may be solicited direct from other units or through ANG/C4.

7.2.2.1. The augmenting evaluator must properly document all evaluation reports required by this instruction. Upon completion of evaluations, the augmenting evaluator forwards copies of the documents to the installing unit QA office.

7.2.2.2. The augmented unit is responsible to enter unit trend analysis data into their database and process QA reports IAW normal unit procedures.

7.3. QA Evaluations and Assessments.

7.3.1. Unit QA performs evaluations and assessments to determine quality and effectiveness of EI engineering, program management, logistics support, team chief development program, training, workmanship, installation practices, and safety.

7.3.1.1. QA evaluation and assessment report AFMC Form 154 (see Attachment 37) provide complete, accurate and impartial data on the entire EI process. Report intent is to measure processes and tasks against established standards, determine if standards are complied with, identify areas of improvement and areas of excellence, and recommend actions necessary to attain continuous compliance with standards.

7.3.1.2. Safety is the responsibility of each Air Force member. QA evaluators have authority to stop an installation during an evaluation when a hazardous condition to personnel or equipment exists. All safety violations will be corrected immediately. The unit commander or QA evaluator, on advice from the base safety office, may allow the team chief to restart the installation.

7.3.1.3. Unit QA must maintain a file of all QA evaluation and assessment reports. They should be kept for at least 2 years.

7.3.2. Types of Evaluations and Assessments.

7.3.2.1. Project Evaluations give an overall view of the quality of installations and compliance with current EI directives, standards, and practices. They also provide data for identifying training deficiencies and potential problem areas.

7.3.2.2. Team Chief evaluations ensure team chief nominees meet the requirements for Team Chief certification by on site evaluations to ensure they have necessary team chief skills. Certification or re-certification evaluations are conducted in the same manner as project evaluations.

7.3.2.3. Training Effectiveness Assessments help assess a work centers training program and installer competence. Assessing these areas ensure effective and efficient project installations.

7.3.2.4. Special Evaluations and Assessments are mandatory when directed by higher authority such as MAJCOM HQs, Wing, Group, or initiated by unit level section supervisors and cover administrative, managerial, or technical subjects. Guidance for performing special evaluations or assessments will come from the directing office.

7.3.3. Project Evaluations.

7.3.3.1. Project evaluations are performed at the request of unit commander, installations flight chief, chief of QA or when directed by higher authority. Normally, QA evaluations are performed on projects under the following conditions:

7.3.3.1.1. Projects involving Air Traffic Control and Landing Systems (ATCALS) that require a flight check.

7.3.3.1.2. Secure Communication projects where emissions security (EMSEC) is an issue.

7.3.3.1.3. Team chief certification evaluations.

7.3.3.1.4. All projects over 90 days; may include both in-progress and final evaluations.

7.3.3.1.5. In-house Prefabricated, Pre-assembled, and Prototype (P3) Workload projects.

7.3.3.1.6. When there is cause to believe the project may be subject to errors which compromise system performance or erode customer satisfaction.

7.3.4. Evaluation Preparation.

7.3.4.1. Review project package.

7.3.4.1.1. Review reports, correspondence, and in house reviews to become familiar with job progress.

7.3.4.1.2. Coordinate with section supervisor to obtain items needed for deployed installation team.

7.3.4.1.3. Contact team chief prior to departure.

7.3.4.1.4. Send a Notice of Arrival E-mail to team chief no later than five duty days prior to arrival date. Send information copies to customer unit commander, programs office, maintenance support, logistics, National Guard Bureau for ANG, (if applicable) stating the following:

7.3.4.1.4.1. Subject will include abbreviated project designator, short title, and site or location (unless classified) for each job to be evaluated.

7.3.4.1.4.2. QA evaluator’s name, grade, Air Force specialty code, and security clearance.

7.3.4.1.4.3. Estimated date of arrival and duration of stay.

7.3.4.1.4.4. Purpose of visit. (in progress, final, or after-the-fact QA evaluation etc)

7.3.4.1.4.5. Point of contact and duty phone number.

7.3.5. Conducting Evaluations

7.3.5.1. Notify customer unit of arrival and arrange in and out-briefings.

7.3.5.2. Identify purpose and objectives of EI QA Program. Stress importance of CSQ and how feedback helps to better improve our services. Encourage local Maintenance Support (MS) Quality Control (QC) participation during your visit.

7.3.5.3. Determine if problems are being encountered by the team and offer assistance and solutions.

7.3.5.4. Schedule the QA evaluation to coincide with the team chief's activities as much as possible.

7.3.5.5. Procedures and Reports.

7.3.5.5.1. The QA evaluator uses AFMC Form 154 (Attachment 37), and AFMC Form 162, **Narrative**, or plain bond paper to record evaluation results.

7.3.5.5.2. QA evaluators use available QA Reference Guides and other checklists as applicable to perform a thorough evaluation of EI work. All technical requirements specified in the project package, Technical Orders (TO), or official commercial publications must be met.

7.3.5.5.3. At the job site, evaluate all applicable items on the QA Evaluation Report. Annotate the number of items observed (OBS), not observed (NOT OBS), deficient (DEF), corrected. (COR), or not applicable (N/A).

7.3.5.5.3.1. OBS is the number of actual items the evaluator physically observed within a sub-category.

7.3.5.5.3.2. NOT OBS is used to record numbers of items the evaluator was unable to observe.

7.3.5.5.3.3. DEF is the actual number of deficient items found out of the number of items observed.

7.3.5.5.3.4. COR is the actual number of deficient items that were corrected during the evaluation.

7.3.5.5.3.5. N/A is annotated if the sub-category is not applicable to the project.

7.3.5.5.4. Use AFMC Form 1628 or bond paper to provide an overall assessment of the project. Break the assessment out by topic areas in the QA reference guide, i.e., Engineering, Project Accomplishment, Team Chief, Workmanship, Base Support, etc."

7.3.5.5.4.1. For all deficiencies, document deficiency, corrective action, recommendation, deficiency status (open or closed), reference, and office of primary responsibility (OPR).

7.3.5.5.4.2. Document specific references for procedural deficiencies. This ensures proper procedures are followed during corrective actions. For example, failure to follow standard installation practices or not identifying an out-of-tolerance condition is a procedural deficiency.

7.3.5.5.5. The QA evaluator will review all test data to ensure adequacy and accuracy.

7.3.5.5.6. For in-progress evaluations, the evaluator will stamp or initial observed and completed tasks on the working copy of the task instructions or drawings. Stamp or initial next to the task number, drawing number, or on an easily viewed location.

7.3.5.5.7. Team chief will sign the QA Evaluation Report. QA evaluator will provide one copy of the report to the team chief. QA evaluator will out-brief the customer unit. Team chiefs should participate in the out-brief.

7.3.5.6. Upon return to home station, the QA evaluator will:

7.3.5.6.1. Perform post-evaluation research on data collected during the evaluation.

7.3.5.6.2. Brief the IS Officer/RRF Chief on results of the evaluation.

7.3.5.6.3. Complete and process all QA evaluation reports.

7.3.5.7. Follow-up, Corrective Actions, and Closing Project Evaluation Reports.

7.3.5.7.1. Initial Team Chief project evaluation reports will be routed and suspense in accordance with local procedures. At a minimum the Chief of QA and Flight Commander/Chief will review all project evaluation reports.

7.3.5.7.2. Open project evaluations deficiencies will be processed as follows:

7.3.5.7.2.1. If the OPR for the open deficiency is *internal* to the unit, follow-up, corrective, and suspense actions, will be determined by the Chief of QA. If there's an external OPR, coordinate report review and request reply within a reasonable time frame.

7.3.5.7.3. Close the report after all internal and external deficiencies are corrected.

7.3.5.7.4. Maintain a file of all project evaluation reports and corrective actions for two years.

7.3.6. Team Chief Certification Evaluations.

7.3.6.1. When requested by the applicable installations superintendent/branch chief, an assigned QA evaluator will perform a team chief evaluation on the Team Chief (TC) or Team Chief Nominee (TCN).

7.3.6.2. Recommend QA evaluator possess the same area of installation expertise as the TC or TCN.

7.3.6.3. Observe and document TC's and TCN's performance on narrative. Write summary paragraphs on AFMC Form 162 using the following headings and guidelines:

7.3.6.3.1. Evaluation Conditions: Describes conditions under which project installation is being installed and evaluation being performed. Complexity of installation, team composition, experience, and weather, etc.

7.3.6.3.2. Team Chief Qualifications: Does TC/TCN demonstrate a good working knowledge of TC duties?

7.3.6.3.3. Customer/Supplier Relationship: Does TC/TCN project professionalism, gain respect, and inspire confidence from the customer?

7.3.6.3.4. Technical Accomplishments: Did QA project evaluation report reflect a true picture of TC/TCN performance? Explain.

7.3.6.3.5. Team Management: (Including supervision, training, health-morale-welfare of team members, safety, etc.) Is it cost effective to have this team chief manage our limited resources?

7.3.6.3.6. Leadership: Does TC/TCN have leadership abilities? Do team members follow the TC/TCN examples? Is team a cohesive unit?

7.3.6.3.7. Administrative: Does TC/TCN have a working knowledge of team chief administrative duties (status reporting, team chief log, ECR/A's, PDQR, AFTO 22, etc., and completion of all required documents?

7.3.6.4. Maintain a file of all team chief certification evaluation reports for 2 years.

7.3.7. Training Effectiveness Assessments

7.3.7.1. Installer performance can indicate the effectiveness of a section's training program. Installers must perform tasks in a proficient and professional manner. Training Effectiveness Assessment (TEA) results may reflect deficiencies in a training program that can be rectified through additional training or training program improvements.

7.3.7.2. TEAs assess individual knowledge and job proficiency.

7.3.7.2.1. Knowledge - how much the installer knows about the job. (Determined by asking questions about the task during task performance. Installers may also complete written tests contained in Air Force Qualification Training Packages or use interactive training devices.)

7.3.7.2.2. Job proficiency - how well the installer performs the job. (Criteria for evaluating and analyzing this element is identified in a section's training plan and equipment technical data used to perform the job. Evaluators observe how well tasks are performed to determine if sufficient skill is demonstrated.)

7.3.7.3. Perform an adequate cross section of TEAs to evaluate proficiency training within the unit. Assessment efforts should concentrate on how well training is being conducted. The chart below offers a recommended number assigned to number to be evaluated (by AFSC) sampling ratio.

NUMBER OF PERSONNEL IN AFSC	ANNUAL SAMPLE SIZE
1	1
2-15	3 to 4
16-25	5 to 7
26-50	8 to 10
51-90	10 to 15

7.3.7.3.1. QA will perform the majority of TEAs on installers who are newly assigned, in up-grade training, qualification or proficiency training, and being cross-utilized.

7.3.7.4. The TEA program consists of two types of evaluations initial, and follow-on.

7.3.7.4.1. Initial TEAs are designed to measure the quality of the section qualification training program and indicate both strong and weak areas of improvement. The assessment is performed after installers are trained and certified on assigned tasks.

7.3.7.4.2. Follow-on TEAs are conducted to reevaluate individuals who were task decertified or to evaluate a suspected area needing improvement. Follow on evaluations may also be conducted to measure installer continual training and ensure proficiency is maintained.

7.3.7.5. Conducting TEAs:

7.3.7.5.1. QA Evaluators will not be the same individual who certified task proficiency. Ideally, the evaluator is certified on the task(s) being evaluated and possesses the same AFSC at a higher skill level than the individual being evaluated. When this is not practical, the evaluator must be capable of observing and verifying task accomplishment with a TO, manual, or other

official reference. The evaluator must be capable of verifying proper procedures, tools, TMDE, materiel, and the task completion conforms to established standards.

7.3.7.5.2. Before conducting the assessment, evaluators should review the applicable project package and the installer's training record to determine which tasks can be evaluated. When possible, select tasks based on deficiency indicators, training management visits, previous TEAs done in the section, and other management indicators. If analysis does not indicate any areas requiring emphasis, select tasks not previously evaluated in the section. TEAs can be performed at home station.

7.3.7.5.3. Coordinate assessments with the team chief and/or section supervisor.

7.3.7.5.4. Before beginning, brief the installer on the task(s) to be assessed, the rating criteria, and the performance standards.

7.3.7.5.5. Assess the preparation, task performance, and post performance phases.

7.3.7.5.6. Stop the assessment if installer uses methods or procedures that could jeopardize safety or cause equipment damage. Task assessments may be continued after the hazard has been corrected.

7.3.7.5.7. During the assessment, ask relevant questions on the methods and procedures used by the installer.

7.3.7.5.8. Assessments are complete when the evaluator determines that the installer's performance and proficiency is sufficient.

7.3.7.5.9. Brief the installer, team chief, or section supervisor at the conclusion of the assessment.

7.3.7.6. TEA Results.

7.3.7.6.1. A technician's performance is assessed as satisfactory or unsatisfactory. Explanations and recommendations are required for each task rated as unsatisfactory.

7.3.7.6.2. Unsatisfactory task performance results will require investigation to determine the cause. Unsatisfactory task performance requires de-certification of the particular task. It does not mean the individual is incapable of performing other tasks.

7.3.7.6.3. Section supervisors, certifying officials, and trainers are briefed as soon as practical on unsatisfactory task performance. Training effectiveness assessments will not be recorded on or made part of performance reports, unfavorable information files, etc.

7.3.7.7. TEA Reports.

7.3.7.7.1. Document TEA on AFMC Form 160 (Attachment 41). Use a separate TEA control number for each assessment report. Maintain the same TEA control number for a multiple task assessment.

7.3.7.7.2. Document number of task errors in each performance phase by category of error. Rate overall task performance as satisfactory or unsatisfactory. In the comments block, describe task performance and provide recommendations if necessary.

7.3.7.7.3. Unsatisfactory task performance will require a follow-up report.

7.3.7.7.4. Installation Officer or designated representative will document corrective actions for unsatisfactory task performance on a narrative. Put the TEA Control Number in the WIN block and put the Evaluatees Name, Rank, and Office Symbol in the work location block. Attach the Narrative to a copy of the original AFMC Form 160.

7.3.7.7.5. TEA reports will be routed and suspense in accordance with local instructions.

7.3.7.7.6. Maintain a file of all TEA reports and corrective actions for unsatisfactory task ratings for two years.

7.3.8. Training Effectiveness Assessments Guide.

7.3.8.1. QA evaluators accomplish each task being evaluated by judging three phases; preparation, task, and post performance. Errors made in any of these phases must be considered when determining results. The decision to declare a performance error must be based on published standard installation practices and TO procedures.

7.3.8.2. Pre-Task or Preparation Errors normally indicate inadequate training on job preparation procedures. Mistakes corrected before the task begins are considered preparation errors and if not corrected, may have a bearing on task performance. For example, installer sets up an oscilloscope, which is overdue calibration, document this as a preparation error. However, if installer uses that oscilloscope during task performance, document as a Category I or II errors, depending on how serious the impact of using "out of tolerance" test equipment. Some preparation errors include:

7.3.8.2.1. TMDE overdue calibration

7.3.8.2.2. Applicable technical data not on hand

7.3.8.2.3. Tools or support equipment not obtained before task initiation.

7.3.8.2.4. Support equipment missing needed parts.

7.3.8.2.5. Equipment was improperly handled.

7.3.8.2.6. Equipment status not checked to determine the existing condition.

7.3.8.3. Task Performance Errors normally indicate inadequate task training. Examples of task performance errors are:

7.3.8.3.1. Applicable technical data or directives not used.

7.3.8.3.2. Warning, cautions, and notes not complied with.

7.3.8.3.3. Not all steps performed.

7.3.8.3.4. Steps not performed in the required sequence.

7.3.8.3.5. Individuals not familiar with emergency procedures.

7.3.8.4. Examples of Post Performance Errors:

7.3.8.4.1. Documentation not properly completed.

7.3.8.4.2. Work area cleanup actions not accomplished.

7.3.8.4.3. Tools and support equipment not properly stored after task completion.

7.3.8.5. Task Performance Error Categories. Categories assist QA Evaluators to determine overall task performance results. Errors are categorized by degree of seriousness:

7.3.8.5.1. Category I errors result in an unsatisfactory rating for that particular task. Some examples are:

7.3.8.5.1.1. An error causes or has the potential to cause an injury. Such an error is serious enough to stop the task assessment.

7.3.8.5.1.2. An error causes or has the potential to cause damage to any item. This includes the item being worked on, all support equipment, or any other item in the work area.

7.3.8.5.1.3. Task performance could not be completed because the individual lacked sufficient knowledge of the task or operation of required support equipment.

7.3.8.5.1.4. An error causes or has the potential to cause a security violation.

7.3.8.5.1.5. An out of tolerance condition or measurement was not recognized and resulted in the equipment not meeting technical data specifications.

7.3.8.5.2. Category II errors do not necessarily result in an unsatisfactory task rating. Some examples are:

7.3.8.5.2.1. An error causes or has the potential to cause damage to any item but does not have detrimental effect on the operational life of the item.

7.3.8.5.2.2. A violation of a standard installation practice such as improper use of TMDE or hand tools, improper soldering techniques, or inadequate corrosion control.

7.3.8.5.2.3. Excessive delays attributable to insufficient job knowledge or improper planning, coordination, or supervision, although the task was successfully completed. The evaluator must determine what is excessive after taking into consideration such factors as complexity and length of the task, adverse working conditions, and other extenuating circumstances.

7.3.8.5.3. Category III errors are of minor impact and lack the seriousness to meet the criteria for a critical or major error.

7.3.8.6. Results are based on overall task performance. QA Evaluators must:

7.3.8.6.1. Document all errors during the evaluation and brief the team chief, section supervisor, and the evaluatee upon completion.

7.3.8.6.2. Determine the category of each error using the above criteria.

7.3.8.6.3. Rate each task as satisfactory or unsatisfactory.

7.3.8.6.4. Brief the team chief or section supervisor, certifying official and the trainer as soon as possible when an unsatisfactory task rating occurs.

7.4. Project Reviews.

7.4.1. General.

7.4.1.1. An important part of QA in-house workload consist of performing project reviews after initial review by the assigned and assisting sections. The QA review is threefold: (1) to determine if the package was properly reviewed by the responsible section, (2) ensure all discrepancies have

been identified and properly described to the engineer for correction and, (3) assist in resolving disagreements over project package corrections.

7.4.1.2. Selection of projects for review depends upon several factors including QA manning, project complexity, project duration, team chief and engineer experience, past section performance, and project visibility. The chief of QA, in concert with the installation officer/section chief, should jointly determine which projects QA will review. Generally, the same types of projects identified in paragraph 7.3.3. are perhaps the best ones to review.

7.4.2. Unit Coordination and Review

7.4.2.1. Newly engineered project packages are normally sent to Project Management or Production Control for review and inventory. Once satisfied package contents are complete, the package is routed to the primary installing section for in-depth review and identification of deficiencies. If the project involves more than one section (commodity), the primary reviewing section sends the package to the applicable section(s) for further review.

7.4.2.2. The review is documented on AFMC Form 150, Record of EI Project Review (Attachment 23) and a continuation narrative if necessary. The project review is conducted according to the procedures in Chapter 6, paragraph 6.3 of this publication.

7.4.2.3. The QA review should focus on the completeness and accuracy of the original team chief review. Ensure all discrepancies are identified and logical and workable solutions accurately documented. An important judgment call is how the deficiencies will impact the project. This should be explained in detail in terms of manhours, materiel, delays, and overall estimated additional costs if not corrected.

7.4.2.4. Discrepancies discovered by QA should be brought to the attention of the original reviewer for correction. QA should add their comments to the AFCM Form 150, **Record of EI Project Review**; include recommendations, references, and any other pertinent information. Stamp or initial and date the front of the AFMC Form 150 to indicate QA review. It's a good idea to make a copy of the review for future follow up actions.

7.4.2.5. Depending on the nature and severity of discrepancies, QA may want to re-review the package after engineering changes are accomplished. Follow up with the section to ensure valid changes are incorporated and the final package is complete.

7.5. Trend Analysis Program.

7.5.1. General.

7.5.1.1. Time and manpower permitting, a unit trend analysis program may prove beneficial when project deficiency data can be collected over a period of time, correctly analyzed, deficiency causes identified, and proper corrective measures recommended and accepted by the responsible management level. A solid trend analysis program not only pinpoints negative trends but also identifies solid areas of performance which can be analyzed and possibly used to improve deficient areas.

7.5.2. Unit Trend Analysis.

7.5.2.1. Suggested performance areas to measure and collect trend data are listed in paragraph 7.3.

7.5.3. Project Evaluation Trend Data.

7.5.3.1. Project evaluation data is taken from the EI Quality Assurance Evaluation Reports, and entered into QA program software. All unit QA sections should use standardized software which includes databases, input forms, report formats, trend graphs, and data logs.

7.5.3.2. List total number of project evaluations performed during a selected time period. Include number of evaluations for the three previous time periods. Within the totals for each time period, breakdown the number of mandatory evaluations, type of evaluations (i.e. final, in-progress, after-the-fact), and number of team chief certification evaluations and type (i.e. initial, re-certification, special).

7.5.3.3. Calculate percentage of effectiveness in all six sections on EI Quality Assurance Evaluation Reports for the Selected time period. Include percentage of effectiveness for the three previous time periods. For each section, total the number of OBS from each sub-section for all project evaluations performed during the time period. Next, total the number of DEF from each sub-section. Then, divide the total DEF in the section by the total OBS in the section, and multiply by 100. Finally subtract that percentage from 100. The result is the percentage of effectiveness for the section.

7.5.3.3.1. For the percentage of effectiveness to be of value, the number of OBS versus the number of DEF must be as accurate as possible.

7.5.4. Training Effectiveness Assessment Trend Data.

7.5.4.1. Must contain the following:

7.5.4.1.1. Number of training effectiveness assessments performed during a selected time period. Include number of assessments for the three previous time periods. Within the total per time period show the number SAT/UNSAT tasks ratings and the type of assessment (i.e. initial or follow-on).

7.5.4.1.2. Identify where training effectiveness assessments were performed, either in-station or while deployed during a project installation.

7.5.4.1.3. Breakdown the total number of training effectiveness assessments performed in each Air Force Specialty (AFS) (i.e. 2E0, 2E1, 2E3, 2E6, etc.). Within each AFS show the number SAT/UNSAT task ratings.

7.5.4.1.4. Breakdown where errors occurred in either task preparation, task performance, or post performance.

7.5.5. Customer Satisfaction Questionnaire (CSQ) Trend Data. An example of the Customer Satisfaction Questionnaire is shown at Attachment 41.

7.5.5.1. Must contain the following.

7.5.5.1.1. The number of CSQs received during a selected time period. Include the number of CSQs for the three previous time periods.

7.5.5.1.2. From section II of the CSQs received during the selected time period, add the ratings received in each category, and divide by the number of CSQs. This results in an average for each category.

7.5.6. Unit QA Analysis.

7.5.6.1. Analyze and summarize the overall fitness of the installations mission as seen through the performance of project reviews, project evaluations, team chief certification evaluations, customer satisfaction questionnaires, and training effectiveness assessments during the selected time period. Analysis should compare previous data to recent data to determine if new trends have developed.

7.5.6.2. Provide analysis of deficiencies found during project evaluations. Identify possible causes and provide recommendations to prevent reoccurrence.

7.5.6.3. Include a narrative in the areas of engineering, project accomplishment, EI team chief, workmanship, EI unit support, safety. The narrative should explain any adverse trends, as seen in the project evaluation trend data.

7.5.6.4. Observe the effectiveness of the team chief development program. Analyze the results of team chief certification evaluations.

7.5.6.5. Comment on the health and status of the units training program, as seen through the performance of Training Effectiveness Assessments. The narrative should explain the cause for any unsatisfactory task ratings and provide recommendations for improvement to a specific training program.

7.5.6.6. Address changes in status (open, closed, or pending) by report control number of Product Quality Deficiency Reports, Report Of Discrepancies, and Technical Order Improvement Reports.

7.5.6.7. Other areas of discussion may include accomplishments, new developments, improvements to current procedures, changes to standards, solution to problems, recommendations for QA program improvements, and areas of concern.

7.6. Technical Order Improvement And Materiel Deficiency Reports.

7.6.1. General.

7.6.1.1. Aggressive action is required by all personnel to identify, report, and correct deficiencies in technical orders and materiel.

7.6.1.2. Air Force Technical Order System provides procedures for correcting technical publications. Technical Order Improvement Report and Reply (AFTO Form 22) is the tool used to recommend specific TO improvements and corrections IAW TO 00-5-1.

7.6.1.2.1. The 738 EIS/DOO serves as the AFMC Equipment Specialist for all SIPTOs. Route all AFTO Forms 22 on 31-10-series Technical Orders to 738 EIS/DOO, 801 Vandenberg Ave, Keesler AFB MS 39534. 738 EIS/DOO is responsible to investigate and validate AFTO Forms 22 prior to submission to the AFMC Air Logistics Center for processing and approval or disapproval.

7.6.1.3. Product Quality Deficiency Report (PQDR) is used to report deficiencies on hardware, software, mission critical computer systems, vehicles, clothing, and textiles to Air Logistics Centers for investigation and resolution. When defective serviceable materiel has been returned to the supply system as serviceable by another USAF organization, a Standard Form (SF) 368, PQDR will be initiated and forwarded in accordance with TO 00-35D-54.

7.6.1.3.1. Team chiefs submit PQDRs for project materiel and safety related EI owned materiel (Category I PDQRs). The O&M unit quality control function is the screening point as

defined in TO 00-35D-54. Category I deficiency report is submitted on materiel that if not corrected, would cause death, severe injury, or severe occupational illness; would cause major loss or damage to equipment or a system; or would directly restrict combat or operational readiness.

7.6.1.3.2. Unit QA office is the screening point for PQDRs on EI unit-owned materiel, such as test equipment, tools, and in-house work. When performing projects at other locations, host unit QC is responsible to process QDRs on project equipment. When there is no Air Force host unit, the unit QA office will be the screening point for all PQDRs. The team chief will provide sufficient information to unit QA for submitting PQDR. Team chief will retain possession of exhibit until disposition instructions are received. Category II deficiency report is submitted on materiel that is attributable to errors in workmanship not conforming to specifications, drawing standards, or other technical requirements.

7.6.1.4. Report of Discrepancy (ROD) is used to report all shipping and packaging discrepancies, including failure to ship items called out on shipping document. When discovered, the origin of shipment will govern ROD reporting procedures for materiel problems. Base supply is responsible to submit RODs on equipment received through the supply system.

7.6.2. Unit QA Deficiency Reporting Responsibilities.

7.6.2.1. Determine if team chief has identified and properly reported TO and materiel deficiencies.

7.6.2.1.1. Record a deficiency on EI Quality Assurance Evaluation Reports, section III, item G when team chief fails to initiate required TO or materiel deficiency reports and assist team chief to initiate required report.

7.6.2.2. Finalize and process PQDRs and AFTO Forms 22 received from team chiefs and unit personnel.

7.6.2.3. Host base supply is responsible to prepare and submit RODs on deficient equipment they issue. However, if host base supply cannot prepare the ROD, QA will prepare and process SF 364, Report of Discrepancy (ROD), based on information received from the team chief.

7.6.2.4. Maintain a separate log for AFTO Forms 22, RODs, and PQDRs, and follow up as required by TO 00-5-1 and TO 00-35D-54 respectively. The QA software program can be used to log AFTO Forms 22 and PQDRs.

7.6.3. Procedures.

7.6.3.1. AFTO Form 22.

7.6.3.1.1. ANG and Active duty QA offices will:

7.6.3.1.1.1. Assign report number in accordance with TO 00-5-1. Record reports in QA software program or locally developed log.

7.6.3.1.1.2. Submit AFTO Forms 22 to 738 EIS/DOO.

7.6.3.1.1.3. AFTO Forms 22 originated as a result of emergency maintenance support work will be submitted by the customer. When performing work at non-USAF facilities, submit AFTO Form 22 through unit QA.

7.6.3.1.2. ANG QA offices should also submit a courtesy copy of AFTO Forms 22 to ANGB/SCXX

7.6.3.2. Product Quality Deficiency Report (PQDR).

7.6.3.2.1. Unit QA will:

7.6.3.2.1.1. Assign control numbers and route reports in accordance with TO 00-35D-54. Record reports in QA software program or locally developed log.

7.6.3.2.1.2. Analyze PQDRs generated by field units and provide crossfeed as applicable.

7.6.3.3. SF 364, **Report of Discrepancy (ROD)**, are submitted by host base supply. It may be wise to maintain a log and assist in provide background information .

7.7. Customer Satisfaction Questionnaires.

7.7.1. General.

7.7.1.1. AFMC Form 161, **Customer Satisfaction Questionnaire (CSQ)**, provide customers an avenue to evaluate the quality of EI products and services. Customer feedback provides data to continually improve our processes in engineering, program management, logistics, installation and training. Attachment 42 is a sample of a CSQ. Units may use this type or CSQ of design one that meets their needs.

7.7.2. Procedures.

7.7.2.1. Unit QA should Mail, e-mail, fax, or hand-carry CSQ to the customer before or upon completion of project. Team chiefs may also deliver CSQs to the customer during the team out-briefing.

7.7.2.1.1. CSQs sent to the customer should include a locally developed cover letter with header blocks completed, and self-addressed return envelope the cover letter should describe the purpose of CSQ program and stress importance of accurate and factual comments.

7.7.2.1.2. QA should maintain a CSQ tracking log and file all current CSQs for two years.

7.7.2.1.3. Enter CSQ delivery date in tracking log. If no reply is received within 30 calendar days after project completion, perform a follow-up by phone or e-mail and document actions in tracking log. If necessary, mail, e-mail, or fax another CSQ package and document actions. If no reply is received within 60 calendar days, CSQ monitor has the option to write off CSQ as “no response received” in tracking log.

7.7.2.1.4. Review all CSQs returned by customers. If comments are vague for dissatisfied ratings of 1, 2, or 3, contact customer for clarification and additional information.

7.7.2.1.5. Route a copy of each CSQ to EI unit commander, installation officer, and applicable work center according to locally determined routing procedures.

7.7.2.1.6. CSQs with dissatisfied ratings or negative comments should be thoroughly investigated by QA and then routed to the unit commander and the installations flight for investigation, comment and corrective action.

7.7.2.1.7. Provide customer with written feedback when CSQ contains unsatisfactory ratings or comments, even if not specifically requested by customer. File copy of feedback in CSQ file.

7.7.2.1.8. Use all CSQ(s) received during the quarter to provide data for Unit Trend Analysis Report.

7.7.3. Quality Product Indicator (QPI).

7.7.3.1. Customer satisfaction is a strong indicator of how well we accomplish our EI mission. The CSQ helps determine effectiveness of EI products and services. Data collection and analysis of customer feedback enables process owners to continually improve processes in engineering, program management, logistics, installation practices and training

7.8. Quality Assurance Of In-House Prefabrication, Preassembled, And Prototype (P3) Workload.

7.8.1. General. All in-house (P3)s will be evaluated by the unit QA function. An audit trail will be established to ensure deficiencies identified with pre-assembled assets can be quickly isolated back to the source of assembly and corrective measures initiated.

7.8.2. Procedures. As a minimum the following procedures will apply:

7.8.2.1. Each rack, harness, jig, etc., will be separately evaluated using existing or locally devised checklists. Storing, packaging, and shipping procedures will be evaluated.

7.8.2.2. QA evaluator will stamp or sign each condition status tag.

7.8.2.3. All inspections will be annotated on EI Quality Assurance Evaluation Report. Multiple item inspections may be documented on one report with a serial number listing and item condition on a continuation sheet.

7.8.2.4. For non-serial numbered items, local control and identification procedures will be established. When physically possible, recommend evaluator affix QA stamp imprint on item to certify quality. Use same location on like assets.

7.9. Funding Policy. QA evaluations and assessments are considered part of the implementation phase of all projects. They will be budgeted as part of the installation team composition and paid for by the customer. Project managers and production controllers are responsible to incorporate QA travel and per diem costs with installation cost estimates before submitting total cost estimates to customers.

DEBRA L. HALEY, DAF
Director, Communications and Information

Attachment 1

GLOSSARY OF REFERENCES, ABBREVIATIONS, AND ACRONYMS

References

AFIND2, *Numerical Index of Standard Publications and Recurring Air Force Publications*

AFIND8, *Numerical Index of Specialized Education/Training Publications*

AFIND9, *Numerical Index of Departmental Forms*

AFIND12, *Functional Index of Departmental Forms*

AFIND17, *Air Force Occupational Safety and Health (AFOSH) Standards Department of Labor Occupational Safety and Health (OSHA) Standards and National Institute for Safety and Health (NIOSH)*

AFI20-14 , *Management of Government Property in the Possession of the Air Force*

AFI21-404, *Management of Communication-Computer Systems Record*

AFI23-202, *Emergency Procurement of Ground Fuels, Oil, and Other Supplies and Services at non-DOD Locations*

AFI24-101, *Movement of Personnel*

AFI 24-301, *Vehicle Operations*

AFI24-302, *Vehicle Maintenance Management*

AFI28-3011, *Transportation Vehicle Operations*

AFI31-401, *Managing the Information Security Program (Supplements DOD 5200.1R)*

AFI31-501, *USAF Personnel Security Program*

AFI32-1031, *Operations Management*

AFI32-6005, *Unaccompanied Personnel Housing and Temporary Lodging Facilities (PA)*

AFI33-104, *Base Level Planning and Implementation*

AFI33-113, *Information Processing Center Operations Management*

AFI34-246, *Air Force Lodging Program*

AFI34-602, *Government Quarters and Dining Facilities*

AFI36-2201, *Enlisted Specialty Training*

AFI36-2403, *The Enlisted Evaluation System (EES)*

AFI36-2903, *Dress and Personal Appearance of Air Force Personnel*

AFI37-126, *Preparing Written Communications*

AFI37-128, *Administrative Orders (PA)*

AFI37-160V1, *Air Force Publications Management Program*

AFI37-160V7, *Publication Libraries and Sets*

AFI41-101, *Obtaining Medical and Dental Care from Civilian Sources (PA)*

AFI41-115, *Persons Authorized Medical Care, Health Benefits, Charges and Billing Procedures*

AFI63-501, *Air Force Acquisition Quality Program*

AFI64-109, *Local Purchase Program*

AFI77-101, *General Accounting and Finance Systems at Base Level*

AFI91-204, *Investigating and Reporting US Air Force Mishaps*

AFI91-207, *USAF Traffic Safety Program*

AFI91-301, *Air Force Occupational Safety, Fire Prevention and Health Program*

AFI91-201, *Explosive Safety Standards*

AFR147-14, *Army and Air Force Exchange Services (AAFES) Operating Policies*

AFR400-54, *Reporting of Item and Packaging Discrepancies*

AFM11-1, *US Air Force Glossary of Standardized Terms*

AFM55-8, *FAA Handbook OAP 8200.1, US Standard Flight Inspection Manual Procedures*

AFM23-110, *USAF Supply Manual*

AFM65-506, *Economic Analysis*

AFM77-206, *Automated Materiel Accounting System Integrated within Standard Base Supply System, Users Manual*

AFPAM34-602, *Government Quarters and Dining Facilities*

AFPAM36-2241, Vol I, *Promotion Fitness Examination (PFE) Study Guide*

AFPAM36-2241, Vol II, *USAF Supervisory Examination (USAFSE) Study Guide*

AFPAM36-2627, *Airman and NCO Performance Feedback System*

AFCIAR70-5, *Technical Support of Contract Management*

AFCIAR125-1, *Command Incident Reporting (RCS: CSV-DS(AR)8006)*

AFTO0-1-01, *Numerical Index, Alphabetical Index, Cross-Reference Table*

AFTO0-1-02, *General Technical Orders*

AFTO0-4-6-2, *Cross-Reference File of Equipment Numbers to Technical Order Numbers*

AFTO00-5-1, *Air Force Technical Order System*

AFTO00-5-15, *Air Force Time Compliance TO System*

AFTO00-20-1, *Preventive Maintenance Program, General Requirements and Procedures*

AFTO00-20B-5, *USAF Motor Vehicle and Vehicular Equipment Inspection*

AFTO00-20-2, *Maintenance Data Collection*

AFTO00-25-108, *Communications-Electronics (C-E) Depot Support*

AFTO00-35D-2, *Electronics Set, Inventory Checklist for Ground Communications-Electronics-Meteorological (CEM) Equipment*

AFTO00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*

AFTO11H5-33-1, *Hydrogen Sulfide, Combustible Gas and Oxygen Alarm System*

AFTO36-1-58, *General Requirements for Repair, Maintenance and Testing of Lifting Devices Standard Installation Practices Technical Orders*

AFTO31-10-2, *Fanning and Forming Conductors for Ground C-E Equipment*

AFTO31-10-3, *Outside Plant Installation*

AFTO31-10-4, *Delta-Matched Doublet Antenna*

AFTO31-10-5, *Concrete Pads and Piers for Ground C-E Equipment*

AFTO31-10-6, *Cable Racks, Troughs and Their Supports*

AFTO31-10-7, *Terminating and Soldering Electrical Connections*

AFTO31-10-9, *Marking Site Layout*

AFTO31-10-10, *Anchoring Devices for Ground C-E Equipment*

AFTO31-10-11, *Cross Connections*

31-10-12, *Metal Ducts and Conduits*

31-10-13, *Cabling for Fixed Ground C-E Equipment*

31-10-14, *Radio Frequency Connectors and Cables*

31-10-16, *Strapping of Fixed Ground C E Components*

AFTO31-10-19, *Antenna Systems-Anchors and Supports*

AFTO31-10-20, *Antenna Systems -High Frequency Discone Antenna*

AFTO31-10-21, *Antenna Systems -Protection, Stepping, and Splicing of Poles*

AFTO31-10-22, *Antenna Systems -Open Wire Radio Frequency Transmission Lines*

AFTO31-10-23, *Antenna System-High Frequency Rhombic Antenna*

AFTO31-10-24, *Communications Systems Grounding, Bonding, and Shielding*

AFTO31-10-27, *Equipment Designations*

AFTO31-10-28, *Erection of Steel Towers*

AFTO31-10-29, *Erection and Assembly of C-E Equipment Standard*

AFTO31-10-32, *Circular Metallic Waveguide*

AFTO31-10-33, *Corrugated Copper Elliptical Waveguide*

AFTO31-10-34, *Fiber Optics Communications Cables and Connectors*

AFTO31R-10-5, *Antenna Systems Maintenance, Repair, and Testing*

AFTO31R-10-38, *HF Radio Communications Systems*

AFTO31W2-10-15, *E-I Standard Installation of Type 1A1, 1A2, and 6A Key Telephone Systems*

AFTO31W2-10-16, *Telephone, Inside Plant Installation*

AFTO31W3-10-12, *Outside Plant Cable Placement*

AFTO31W3-10-13, *Outside Plant Cable Splicing*

AFTO31W3-10-14, *Outside Plant Cable Termination*

AFTO31W3-10-15, *Outside Plant Cable Testing*

AFTO31W3-10-16, *Outside Plant Pressurization*

AFTO31W3-10-19, *Telephone Outside Plant Installation*

AFTO31W3-10-20, *Telephone Outside Plant Installation, Drop and Block Wiring and Station Installation*

AFTO31W3-10-21, *Outside Plant Cable Maintenance and Repair*

AFTO31W3-10-22, *Outside Plant Telephone*

AFTO31Z-10-2, *Prevention and Elimination of Interference of C-E Equipment*

AFTO31Z-10-4, *Electromagnetic Radiation Hazards*

AFTO31Z-10-6, *Radio Frequency Interference Prediction Procedures*

AFH37-137, *The Tongue and Quill*

AFOSH91-5, *Welding, Cutting and Brazing*

AFOSH91-25 , *Confined Spaces*

AFOSH91-31, *Personal Protective Equipment*

AFOSH91-50, *Communications Cable, Antenna and C-E Systems*

AFOSH91-66, *General Industrial Operations*

AFOSH127-38, *Hydrocarbon Fuels General*

AFOSH127-43, *Flammable and Combustible Liquids*

AFOSH127-45, *Hazardous Energy Control and Mishap Prevention Signs and Tags*

AFOSH161-21, *Hazard Communications Program, Jan 89 IMC 89-1*

AFOSH161-9, *Exposure to Radio Frequency Radiation*

DFAS-DE177-101, *General Accounting and Financial Systems at Base Level*

DFAS-DE177-102, *Commercial Transactions at Base Level (PA)*

DFAS-DE177-103, *Travel Transaction at Base Level (PA)*

DFAS-DE177-104, *Civilian Pay Transactions*

DFAS-DE177-206, *Automated Materiel Accounting System Integrated within Standard Base Supply Systems*

DODI5000-2/AFSUP1, *Modification Approval and Management*

DODD5500-7, *Standards of Conduct (PA)*

DODR5030.49, *Customs Inspection*

AFVA91-303, *Danger - Do Not Energize - Person Working on Antenna*

38 EIWVA91-304, *Danger - Do Not Energize - Work in Progress*

38 EIWVA91-305, *Danger - Interlocks Disabled*

38 EIWVA91-306, *Danger - High Voltage*

NBSH-30, *National Bureau of Standards Handbook -National Electric Safety Code*

TM5-725, *Rigging*

TM5-744, *Structural Steel Work*

NFPAP #70, *National Electric Code Handbook*

MIL-HDBK 419, Vol I and II, *Grounding, Bonding, and Shielding for Electric*

MIL-HDBK 232A, *Red/Black Engineering and Installation Guidelines*

MIL-STD 454K, *Standard General Requirements for Electronic Equipment*

MIL-STD 188-124A, *Grounding, Bonding and Shielding*

NACSIM 5203, *National Agency COMSEC Installation Manual (Red/Black Installation Criteria)*

5 USC, *United States Code*

Forms

AF Form 9, **Request for Purchase**

AF Form 15, **United States Air Force Invoice**

AF Form 103, **Base Civil Engineering Work Clearance Request**

AF Form 171, **Request for Driver's Training and Addition to U.S.Government Driver's License**

AF Form 332, **BCE Work Request**

AF Form 592, **USAF Welding, Cutting and Brazing Permit**

AF Form 601, **Equipment Action Request**

AF Form 616, **Fund Cite Authorization (FCA)**

AF Form 623, **On-the-Job Training Record**

AF Form 711A , **Ground Mishap Report**

AF Form 910, **Enlisted Performance Report**

AF Form 911, **Senior Enlisted Performance Report**

AF Form 979, **Danger Tag**

AF Form 980, **Caution Tag**

AF Form 981, **Out of Order Tag**

AF Form 988, **Leave Request/Authorization**

AF Form 1098, **Special Task Certification and Recurring Training**

AF Form 1146, **Engineering Change Request/ Authorization**

AF Form 1261, **Command, Control, Communication and Computer Systems (C4) Acceptance, Commissioning, and Removal Certificate**

AF Form 1269, **Request for Load/Change in Fund Targets**

AF Form 1297, **Temporary Issue Receipt**

AF Form 1566, **WAPS Test Verification**

AF Form 1800, **Operator's Inspection Guide and Trouble Report (General Purpose Vehicles)**

AF Form 1806, **Operator's Inspection Guide and Trouble Report (Aircraft Towing, Base Maintenance, Deicers, High Reach and Snow Removal)**

AF Form 1828, **Vehicle Historical Record**

AF Form 2005, **Issue/Turn In Request**

AF Form 2282, **Statement of Adverse Effect - Use of Government Facilities**

AFMC Form 148, **Team Chief Fitness Evaluation**

AFMC Form 149, **C4 Systems Project Cover Sheet**

AFMC Form 150, **EI Project Review**

AFMC Form 151, **Engineering Installation Team Pre-Deployment Checklist**

AFMC Form 152, **Engineering Installation Team Chief Log**

AFMC Form 153, **Pre-Implementation Site Survey (PSS) Checklist**

AFMC Form 154, **EI Quality Assurance Evaluation Report**

AFMC Form 155, **Engineering Installation Team Post Deployment Checklist**

AFMC Form 160, **Training Effectiveness Assessment (TEA)**

AFMC Form 161, **Customer Satisfaction Questionnaire (CSQ)**

AFMC Form 162, **Narrative**

AFMC Form 163, **Record of Corrective Action**

AFMC Form 164, **Fiber Optic End-to-End Attentuation Test**

AFMC Form 165, **Consolidated Utility Cut/Damage Report**

AFMC Form 166, **Project Status Report**

AFTO Form 22, **Technical Order System Publication Improvement Report and Reply**

AFTO Form 229, **Maintenance Requirements, Validation and Accomplishment**

AFTO Form 470, **Electronic Set Inventory Checklist**

AFTO Form 471, **Electronic Set Inventory Checklist**

AFTO Form 472, **Electronic Set Inventory Checklist Completion Data**

DD Form 173-2, **Joint Message form**

DD Form 200, **Financial Liability Investigation of Property Loss**

DD Form 518, **Accident-Identification Card**

DD Form 1149, **Requisition and Invoice/Shipping Document**

DD Form 1348-1, **DOD Single Line Item Release/Receipt Document.**

DD Form 1351, **Travel Voucher**

DD Form 1351-2, **Travel Voucher or Subvoucher**

DD Form 1351-5, **Government Quarters and Mess**

DD Form 1354, **Transfer and Acceptance of Military Real Property**

DD Form 1575, **Suspended Tag - Materiel**

SF 50B, **Notification of Personnel Action**

SF 71, **Application for Leave**

SF 91, **Operator's Report of Motor Vehicle Accident**

SF 149, **US Government National Credit Card**

SF 361, **Transportation Discrepancy Report**

SF 364, **Report of Discrepancy**

OF 346, **US Government Motor Vehicle Operators Identification Card**

Abbreviations and Acronyms

AC—Alternating Current

AF—Air Force

AFI—Air Force Instructions

AFLC—Air Force Logistics Command

AFMAN—Air Force Manuals

AFMC—Air Force Materiel Command

AFOSH—Air Force Occupation Safety, Fire Prevention And Health

AFO—Accounting Finance Office

AFPD—Air Force Policy Directive

AFI—Air Force Instruction

AFTO—Air Force Technical Order

AMP—Advance Materiel Projection

ANG—Air National Guard

ASC—Allied Support Completion

ATCALS—Air Traffic Control And Landing Systems

AWM—Awaiting Maintenance

AWP—Awaiting Parts

BCE—Base Civil Engineer

BEE—Base bio-Environmental Engineer

BOD—Beneficial Occupancy Date

BPID—Blueprint Phase Implementation Directive

BTU—British Thermal Units

C4—Command, Control, Communications-Computer

CA—Connection Approval

CA/CRL—Custodian Authorization/Custody Receipt Listing

CAT—Catalog

CE—Civil Engineer

CIR—Command Incident Report

CI—Communications and Information

COMSEC—Communications Security

COS—Chief of Supply

COTS—Commercial Off The Shelf

CSIR—Communications-Computer Installation Record

CSRD—Communications-Computer Systems Requirement Document

CSO—Communications Systems Officer

CWD—Chemical Warfare Defense

C4I—Command, Control, Communications, Computer, and Intelligence

DDN—Defense Data Network

DISA—Defense Information Systems Agency

DMR—Date Materiel Required

DMS—Defense Messaging System

DOD—Department of Defense

DRMO—Defense Reutilization and Marketing Office

DSN—Defense Switching Network

DWG's—Drawings

ECR/A—Engineering Change Request/ Authorization

EED—Electro-Explosive Devices

EI—Engineering Installation

EIG—Engineering Installation Group

EIS—Engineering Installation Squadron

E-Mail—Electronic Mail

EMC—Electromagnetic Compatibility

EMI—Electromagnetic Interference

EMO—Equipment Management Office

EMP—Electromagnetic Pulse

EMRH—Electromagnetic Radiation Hazard

ERRC—Expandability/Reparability//Cost

FAA—Federal Aviation Administration

FAS—Functional Address Symbol

FO—Fiber Optic

GPS—Global Positioning System

GSA—General Services Administration

HEMP—High-Altitude Electromagnetic Pulse

HNA—Host Nation Approval

HQ—Headquarters

HZ—Hertz (cycles per second)

IAW—In Accordance With

IM—Item Manager

ISM—Implementation Strategy Meeting

ISSL—Initial Spares Support List

JETDS—Joint Electronics Type Designator System

JFTR—Joint Federal Travel Regulation

JTR—Joint Travel Regulation

LAN—Local Area Network

LOA—Letter of Agreement

LOM—List of Materiel

LOS—Line of Sight

MAJCOM—Major Command

MC&G—Mapping, Charting, and Geodetic Services

MCL—Minimum Cutting Length

METNAV—Meteorological Navigational

MICAP—Mission Impairment Capabilities

MIRD—Maintenance-Installation Required Date

MIRESP—Maintenance and Installation Responsible

MSES—Measurement and Specialized Engineering Services

MSS—Mission Support Squadron

MTA—Military Transportation Authorization

NEC—National Electrical Code

NOA—Notification of Arrival

NSL—Non-Stock Listed

NSN—National Stock Number

ODC—Ozone Depleting Chemicals

O&M—Operations and Maintenance

OPlan—Operations Plan

P3—Prefabrication, Preassembled, and Prototype

PCB—Polychlorinated Biphenyl

PI—Program Implementation

PM—Project Manager/Production Controller

PMD—Program Management Directive

POC—Point of Contact

POL—Petroleum, Oil, and Lubricant

POM—Program Objectives Memorandum

PQDR—Product Quality Deficiency Report

PSA—Project Support Agreement

PSAR—Project Support Agreement Reply

PSS—Pre-Implementation Site Survey

PTT—Post, Telephone. and Telegraph

QAE—Quality Assurance Evaluator

RFR—Radio Frequency Radiation

ROD—Required Operational Date

ROD—Report of Discrepancy

RPO—Responsible Property Officer

SA—Support Agreement

SAT—Systems Acceptance Testing

SCI—Sensitive Compartmented Information

SIPTO—Standard Installation Practices Technical Order

SOI—Statement of Intent

SOW—Statement of Work

SRL—Standard Reel Length

STEM—Systems Telecommunications Engineering Manager

STEM-B—Systems Telecommunications Engineering Manager For The Base

TCTO—Time Compliance Technical Order

TDY—Temporary Duty

TEMPEST—Special Shielding Against Electromagnetic Radiation

TI—Task Instructions

TMDE—Test Measurement Diagnostic Equipment

TPA—Travel by Privately Owned Conveyance - Mileage Reimbursement

TPC—Travel by Private Conveyance - Cost of Common Carrier

TR—Transportation Request

TSD—Team Start Date

TSO—Telecommunications Service Order

TSR—Telecommunications Service Request

WIN—Workload Identification Number

Attachment 2

AFMC FORM 148, TEAM CHIEF FITNESS EVALUATION

TEAM CHIEF FITNESS EVALUATION

NAME			
	E = EXCELLENT	S = SATISFACTORY	U = UNSATISFACTORY
1. **PRODUCTIVITY**	E	S	U
QUALITY OF WORK			
QUANTITY OF WORK			
TIMELINESS OF WORK			
COMMENTS			
2. **TRAINING**	E	S	U
UPGRADE (OJT/CDC)			
PROFICIENCY/QUALIFICATIONS			
CONTINGENCY/MOBILITY/OTHER			
COMMENTS			
3. RESPONSIBILITIES	E	S	U
SAFETY			
SECURITY			
CONTROL/SAFEGUARD OF EQUIPMENT			
COMMENTS			
4. STANDARDS	E	S	U
DRESS			
WEIGHT			
FITNESS			
COMMENTS			
5. **PERSONAL QUALITIES**	E	S	U
INITIATIVE			
JOB KNOWLEDGE			
PUNCTUALITY			
LOYALTY/DEDICATION			
WORKING RELATIONS			
COMMUNICATIVE SKILLS			
COMMENTS			

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6. CONDUCT/BEHAVIOR	E	S	U
RESPECT FOR AUTHORITY			
CUSTOMS AND COURTESIES			
MAINTAINS GOVERNMENT FACILITIES/EQUIPMENT			
COMMENTS			

7. SUPERVISORY	E	S	U
PME			
PROBLEM SOLVING			
SELF SUFFICIENCY			
LEADS/MOTIVATES SUBORDINATES			
MAINTAINS DISCIPLINE			
EVALUATES FAIRLY AND CONSISTENTLY			
PLANS/DIRECTS AND ORGANIZES WORK			
SETS AND ENFORCES WORK STANDARDS			
COMMENTS			

OTHER COMMENTS		
NAME OF INDIVIDUAL *(Printed)*	SIGNATURE	DATE
NAME OF SUPERVISOR *(Printed)*	SIGNATURE	DATE

AFMC FORM 148, 20000619 (*Reverse*)

Attachment 3

TEAM CHIEF/TEAM CHIEF NOMINEE FOLDER CONTENTS

A3.1. A team chief nominee's folder should contain, as a minimum:

A3.1.1. Front Cover: Rank, name, AFSC, team identification, and privacy act label.

A3.1.1.1. Tab A: Letter of nomination from the with the Flight Chief/Installation Officer's endorsement.

A3.1.1.2. Tab B: Performance Feedback Form

A3.1.1.3. Tab C: AF Form 1256, Certification of Training, certifying completion of Lightning Force Orientation and Installation Practices (LFOIP) in the related AFSC.

A3.1.1.4. 1Tab C: Supervisor Safety Training Completion Document IAW AFI 91-301, Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program.

A3.1.1.5. Tab D: AF 797 (or electronic equivalent) for tasks required prior to attending Team Chief Academy.

A3.1.1.6. Applicable Tabs: Memorandums for record, signed by the individual's supervisor, covering missing documentation the supervisor or team chief nominee cannot replace due to a lapse or loss (Applicable Tabs).

A3.2. A team chief's folder should contain, as a minimum:

A3.2.1 Front Cover: Name, rank, AFSC, team identification, and privacy act label.

A3.2.2. Tab A: Letter of recommendation from the Chief of Installations with Installation Officer's approval of certification and award of the "EI Team Chief" duty title.

A3.2.3. Tab B: Performance Feedback Form.

A3.2.4. Tab C: AF Form 1256, Certificate of Training, certifying completion of LFIOP seminar in the related AFSC.

A3.2.4.1. Tab C: AF Form 1256, Certificate of Training, certifying completion of the EI Team Chief Course.

A3.2.4.2. Tab C: Hazardous Cargo Certification Course.

A3.2.4.3. Tab C: Supervisor safety training completion document (IAW AFI 91-301)

A3.2.5. Tab D: Quality Assurance Evaluation Report, covering any type of team chief evaluation.

A3.2.6. Tab E: For military personnel, AF Form 2096, Classification/On-the-Job Training Action, designating the award of Special Experience Identifier (SEI) Code 200 or computer generated Report on Individual Personnel from the Military Personnel Flight.

A3.2.7. Applicable Tabs: Memorandums for record, signed by the individual's supervisor, covering missing documentation the supervisor or team chief nominee cannot replace due to a lapse or loss (Applicable Tabs).

Attachment 4

EI TEAM CHIEF NOMINEE TRAINING TASK LIST

(AF Form 797 or CAMS)

A4.1. Prepare E-mail messages.

A4.1.1. Materiel problem/re-supply.

A4.1.2. Materiel shortage (pre/post-acceptance).

A4.1.3. Materiel problem/work stoppage.

A4.1.4. Work stoppage message due to other problems such as allied support or engineering

A4.1.5. Excess/residue project materiel turn-in.

A4.1.6. Circuit rider.

A4.1.7. Problems encountered during a Pre-Implementation Site Survey (PSS).

A4.2. Conduct EI team briefing (pre-during-post deployment).

A4.3. Submit Product Quality Deficiency Reports (PQDR) (if applicable).

A4.4. Perform an EI project review.

A4.5. Complete EI Team Chief Log and Job Summary.

A4.6. .Perform pre-deployment/post-deployment actions.

A4.7. Conduct a briefing for host base and customer personnel.

A4.8. Perform a Pre-Implementation Site Survey (PSS) and complete Pre-Implementation Site Survey (PSS) checklist.

A4.9. Complete an AF Form 9, Request for Purchase (demonstrate use of IMPAC card, if applicable).

A4.10. Complete an AF Form 15, United States Air Force Invoice (if used).

A4.11. Complete an AF Form 103, Base Civil Engineering Work Clearance Request.

A4.12. Complete and submit AF Form 1146, Engineering Change Request/Authorization (ECR/A).

A4.12.1. Post changes to project package.

A4.12.2. Annotate project drawings

A4.12. Conduct a self-evaluation using Quality Assurance Evaluation Report.

A4.13. Complete a cover letter for transmittal of C4 Systems Installations Records (CSIRs).

A4.14. Complete an AF Form 1261, **Command, Control, Communications and Computer Systems Acceptance, Commissioning, and Removal Certificate**.

A4.15. Submitting AFTO Form 22, **Technical Order Improvement Report and Reply for T.O.** deficiencies (if applicable).

Attachment 5

CONNECTION APPROVAL (CA)

A5.1. Foreign countries require U.S. government furnished equipment be approved by host post, telephone, and telegraph (PTT) authorities before equipment can be connected to both commercial point to point leased lines and public switched networks. Host nation approval (HNA) to locate equipment with in its borders is a separate approval, and generally required before CA is requested. The PTT authorities require a CA to ensure government furnished and lease terminal equipment will not damage commercial lines, facilities, interfere with service, or endanger service personnel. CA is required regardless of operational necessities.

A5.2. The engineer is responsible for, or ensuring it is prepared the CA application for all equipment not previously approved for connection, new installation or reconsideration of approved equipment in specific foreign countries.

A5.3. The engineer will consider CA requirements:

A5.3.1. When providing preliminary technical solution and costing data and assistance

A5.3.2. Consider CA when reviewing a base cable study.

A5.3.3. Include CA requirements as an item of information supplied as part of a site survey.

A5.3.4. Include a statement in the project support agreement (PSA) on status of the CA application being prepared with an estimated date the CA application will be submitted to requiring command OPR for CA.

A5.4. When conducting a site survey and prior to departure:

A5.4.1. Review CA listing to determine if CA has been obtained

A5.4.2. Advise local personnel CA will be required through HQ USAFE or HQ PACAF, time required after submission of CA application to HQ USAFE or HQ PACAF, and approval by host PTT is extensive and outside the control of the engineering organization.

A5.4.3. See appendices to DISA Circular AFI 310-140-2, Leased Services and Facilities Connection Approval Procedures. Provide equipment parameters which must be considered in CA applications and requests.

A5.5. During preparation of a PSA determine which of the following statements is correct and include in paragraph 1e of the PSA:

A5.5.1. This equipment does not require connection approval.

A5.5.2. This equipment requires connection approval and has already been granted.

A5.5.3. This equipment requires connection approval, an application is being prepared for submission or has been submitted through HQ USAF/SIPCB for approval.

Note: When above statement is used it is important that you provide the estimated date of connection approval submission to HQ USAFE/HQ PACAF or the actual date connection approval application was submitted

Attachment 6

TYPICAL PROJECT SUPPORT AGREEMENT (PSA) FORMAT

(Insert the Organization Letterhead)

(Date)

MEMORANDUM FOR: (Address PSAs to base CSO or host base Commander)

FROM: (Insert appropriate office)

(Insert appropriate address)

SUBJECT: Project Support Agreement for (insert project title, location, WIN number).

1. Program Information:

a. Project Designator:

b. The purpose of the programmed facility or equipment is to provide (insert summary of applicable part of programming document). This is an (upward generated or downward directed requirement). For all downward directed requirements, add; This project is authorized under PMD:_____, Dated:_____, Program Title:_____, USAF Precedence Rating:_____, FAD:_____, Base design, contracting and construction resources shall be allocated for this project consistent with the above FAD IAW DoD Directive 4410.6 as implemented in AFI 16-30.

c.Authority for the site survey is (insert tasking letter or message, CSRD, or BPID) dated: (insert appropriate date).

d. USAF Precedence Rating: (use only if upward generated requirement).

e. Host Nation Approval and Connection Approval, (use if applicable, and address any requirements).

2. Siting and Project Installation Data: Attachment 1 of the PSA contains the siting and project installation data.

3. Civil Engineering Support Requirements: Attachment 2 of PSA identifies the support requirements to be provided by the host civil engineering activity.

4. C4 Systems Support Requirements: Attachment 3 of the PSA identifies the support requirements to be provided by the host C4 systems activity.

5. Base Support Requirements:

a. The host base is responsible for providing supply, local purchase, and constructional services. The base level programmers should take no action to procure materiel unless specifically instructed to do so by the assigned EI activity. The EI activity will provide necessary instruction when such services are required.

b. Identify and manage materials containing asbestos, PCBs, lead acid batteries, lead based paints, creosote treated telephone poles, hazardous materials storage sites, and hazardous wastes storage sites as

defined in OSHA 1926.58, Toxic Substance Act for PCBs-40 CFR 761; the Clean Water and Clean Air Acts, CFR-40 parts 260 through 270; OSHA 1910.1200, Resources Conservation and Recovery Act; and the Federal Facility Compliance Act.

c. The host base, project site owner, or responsible agency will ensure the proposed work site has undergone an environmental assessment with special attention to any asbestos containing materials, PCBs in transformers, capacitors, buried, stored hazardous wastes, lead acid battery banks and close proximity stored in use hazardous materials to include fuels. Environmental assessments must be complete with data available before any type of demolition, removal, and construction antenna, tower, equipment upgrades can proceed. Data on any and all hazardous materials hazardous wastes must be provided to project engineers through the PSA concurrence. Specific data required is as follows:

(1) Materials containing asbestos - types of asbestos, % of asbestos in material, physical condition of asbestos containing materials, blueprints of structures indicating the location of asbestos containing materials.

(2) Materials containing PCB's - Parts per million of PCB's (50-500+), ppm determines the controls required by EPA, proper labels affixed on transformer, and capacitors that contain PCB's, blueprints indicating the location of PCB containing equipment. NOTE: Engineering, installation personnel and contractors performing installations will not transport, handle any equipment containing or contaminated with PCB's material.

(3) Lead Acid Battery Banks - Removal, upgrade of battery banks, all lead acid batteries must be transported and disposed by EPA permitted or licensed activity. Engineering, installation teams and contractors performing demolition removal, and or installation are not authorized to transport or dispose of any lead acid batteries. Battery banks are noted on blueprints.

(4) Lead Based Paints - Materials, equipment, structures painted with lead based paints must be identified before any demolition, replacement can proceed. Items painted with lead based paint qualify as hazardous wastes for demolition purposes and have to be disposed of under Resources Conservation and Recover Act (RCRA) procedures. RCRA has specific procedures or requirements for the transportation and disposal of materials painted with lead based paints. Data on structures that have lead based paint should be identified in the project support agreement. Blueprints should indicate structures or equipment that are painted with lead based paints.

(5) Hazardous materials or hazardous wastes that are stored and or used must be identified in the project support agreement along with a blueprint indicating locations.

d. The host base will verify duct availability and condition.

e. Appropriate permits for entering confined spaces will be issued to the installation team chief.

f. Obtain logistics support, consisting of technical data, spares, training, equipment, maintenance, and technical assistance through local base resources, the host command, or the equipment manufacturer. To assist you with the logistics support, we have provided specifications for the applicable COTS equipment and vendors. Please take the necessary actions to arrange for command logistic support of these equipment items by the installation start date (ISD).

Vendor: *(Insert name, address, phone, and point of contact).*

Equipment Items: *(Insert part number, model number, versions, and quantity).*

Technical Support Information: *(Insert part repair and replacement, technical support numbers, POC and cost). (NOTE: If no supporting services are required say so or list as any items of specific concern or potential problem areas that must be addressed or specified. Disregard this paragraph if COTS equipment is not used.)*

Note: The 738 EIS is not responsible for any damage to utilities, structures, or facilities during the course of project implementation.

6. Implementation Schedule Dates:

a. The anticipated allied support completion (ASC) date for all support covered in this PSA is, (DD/MM/YY). If this date cannot be met, advise the project manager/production controller at his organization, (FAS, DSN) and this office.

b. The allied support completion date is for planning purposes only. Do not delay your response to this PSA because of this date. Provide your proposed completion or projected completion date as part of your concurrence or so that we may continue our internal processing of this requirement. Request the actual allied support completion date and the BCE project number be provided to the CSO PM after BCE has completely analyzed the support. The project completion date will have to be adjusted if the ASC date is significantly deferred.

c. The anticipated team start date (TSD) or communications contractor start date for project installation is, (DD/MM/YY).

d. These dates will be updated in the C4 systems programmers report.

7. Funding: (Use funding information provided by the project manager/production controller as called for by the instruction pages under program management activity of this attachment. The host base or command is responsible for all required funding to implement the program.)

8. PSA Processing:

a. Request you provide message or telephonic acknowledgment of this PSA to our office (this statement is not needed if PSA is left on site). Based upon the precedence of the requirement 30 calendar days have been scheduled for processing this PSA. If the schedule cannot be met, request you provide this office and all distribution addresses the following:

(1) PSA identification.

(2) Reasons for delay.

(3) Estimated date PSA endorsement will be sent. Note, the engineering action cannot be finalized until your concurrence with the PSA has been returned to this office. Any delay at this time can incur a delay in installation of your programmed facility.

b. Concurrence with the PSA may be by message or letter and shall contain the following:

(1) Concurrence with the equipment or facility siting.

(2) Concurrence with all supporting requirements, service, and ASC date.

(3) Support project request number or base civil engineer work order number and date submitted with a brief description and title of project.

(4) Security clearance of the installation personnel will be SECRET unless otherwise requested in the concurrence.

(5) A statement whether there are any contractual obligations, that may involve penalties, associated with the anticipated implementation schedule dates for this project.

(6) TEMPEST requirements if applicable in accordance with current AF TEMPEST guidance (AFI 33-203).

(7) CONUS based EI personnel are not all chemical warfare defense (CWD) trained and do not routinely carry CWD equipment on installation projects due to additional baggage and costs. If, based on the threat, CWD equipment and training are required for team members, you should notify the project manager/production controller as soon as possible. If the threat changes during the preparation phase for this project, notify the project manager/production controller so that adjustment can be made. Please note that waiting until you receive our team arrival message to make the requirement known will most likely result in this projects delay while a CWD capable team is identified.

(8) Asbestos survey certification needs to be accomplished IAW AFI 32-1052.

(Insert Project Engineer Signature Element)

(Insert Office Section or Branch name)

Attachments:

1. Siting & Project Installation Data
2. Civil Engineering Support Requirements
3. C4 Systems Support Requirements
4. Drawing List with Drawings

cc:

EI project manager/production controller

Base Program Management Activity

Base Civil Engineer

Active duty project engineering function

MAJCOM/SCP

MAJCOM TEMPEST office if TEMPEST considerations are involved

List other addresses as appropriate

Note: Use complete addresses (office, street address, base, and zip) for organizations outside of your own.

Attachment 7

PSA ATTACHMENT 1

Project (Insert applicable WIN)

(Insert Project Title)

(Insert applicable base or site)

Note: This is the recommended format. Omit items listed that are not applicable to your project.

A7.1. Coordination information: Use the paragraph below which is appropriate for the type of survey accomplished.

A7.1.1. Information for this PSA was obtained during an engineering site survey conducted on (insert date) by (insert survey personnel, engineering activity office symbol, and DSN). The following personnel were contacted (list personnel, organization office symbol, and DSN), or

A7.1.2. Information for this PSA was obtained by (insert survey personnel, engineering activity office symbol, and DSN) a desk top survey of available C4 systems installation records and other technical data. Siting information contained herein was coordinated by telephone with personnel listed below. (List personnel, organization, office symbol, and DSN number.)

A7.2. Siting Data:

A7.2.1. (List specific sites or base locations).

A7.2.2. (Describe exact equipment space, facilities, etc., to be reserved and make reference to attached drawing, by number and revision, which shows required space. Where possible, identify floor space, equipment racks, shelf space, cable port, antenna positions, underground cable ducts, cable pair, circuit breakers, etc.).

A7.2.3. Waivers. (If the site requires a waiver of any existing clearance regulations, so state and specify why another site cannot be used that doesn't violate clearance).

A7.2.4. Limitations. (Identify all known or suspected limitations in equipment or facility performance attributable to the proposed site.)

A7.2.5. Restrictions. (List any known restrictions on future expansion or construction in the vicinity. If applicable, include the following: Any future construction or buildup in the area of this siting must be coordinated with (identify organization and office symbol).)

A7.2.6. Other. (If site is not on government owned property, note any real estate acquisition requirements, any special site problems, mineral rights, sewage disposal, restricted access, access road requirements, antenna restrictions as to size or placement.) NOTE: Real estate acquisition information may be classified.

A7.3. Proposed Project Installation:

A7.3.1. (List the C4 system equipment to be installed, removed, or relocated in each facility involved, or reference attachment that list the same information.)

A7.3.2. (For removal and relocation of equipment and associated real property structures, towers, poles, and guys be very specific on what has to be done and how it must be accomplished so full coordination

and cooperation of the support base will be secured. Task the base to arrange for disposition of equipment removed in accordance with AFI 33-104.)

A7.4. Related Factors:

A7.4.1. (Enter the required EMC and EMRH impact summary. The summary must include a description of all EMI problems which may result from the proposed C4 system installation or a statement to the effect the results of EMC study indicates no EMI problems are expected. The summary must include a description of the predicted EMRH impact to personnel, petroleum, oil, lubricants (POL), explosives and required controls. The predicted absence of EMRH will be clearly stated if the results of studies indicates there are no predicted EMRH to personnel, POL, and explosives. The summary may refer to EMRH drawings or to other documents attached to the PSA. Enter laser hazards statement if appropriate.)

A7.4.2.. No change to the existing construction design criteria that affects these C4 support structures will be approved without (insert organization and office symbol of engineer) concurrence.

A7.4.3. (Describe relationship to other supporting or related projects).

A7.4.4. Environmental impact will be determined IAW AFI 32-7061.

A7.4.5. (Attach a copy of any documentation of tentative agreements made between survey team and base personnel if applicable and deemed necessary by the engineer.)

A7.4.6. (If TEMPEST considerations are involved, identify the requirements for or request availability of the TEMPEST evaluation.)

A7.5. Drawings: See PSA attachment 4.

Attachment 8

PSA ATTACHMENT 2

CIVIL ENGINEERING SUPPORT REQUIREMENTS

Project (Insert applicable WIN)

(Insert Project Title)

(Insert applicable base or site)

Note: This is the recommended format. Omit items listed that are not applicable to your project.

A8.1. Supporting Construction Requirements: This outlines the basic requirement for which host concurrence is needed and must be very clear. It includes all changes to existing real property required in preparation for the programmed C4 systems equipment installation. If multiple locations are involved, additional subparagraphs may be added, listing the same type of information for each location, or special individual attachments to the PSA can be used. List only the items that apply. If no supporting construction is required, say so. Where practical and agreed to by site personnel, existing facilities will be designated to be reserved for support of the project installation.

A8.2. Site Work and Exterior Utilities:

A8.2.1. Clearing and grubbing.

A8.2.2. Building excavation.

A8.2.3. Grading.

A8.2.4. Paving and walks.

A8.2.5. Drainage and landscaping.

A8.2.6. Sewer, water and fuel.

A8.2.7. Access road and drives.

A8.2.8. Power generation and distribution.

A8.2.9. Other.

A8.3. Buildings: Towers and other structures, existing, addition expansion, or new construction required. Break this out into three categories as shown below.

A8.3.1. Civil architectural requirements:

A8.3.1.1. Type of construction.

A8.3.1.2. Interior utilities required.

A8.3.1.3. Dimensions, include minimum clear heights required

A8.3.1.4. Walls, floors, ceilings, doors, and window criteria.

A8.3.1.5. Acoustic requirements.

A8.3.1.6. Cable port locations, floor loading, special equipment openings entry or removal.

A8.3.1.7. Physical security requirements. Identify the applicable regulations, including paragraph number. Address any requirements for electronic security, the level of security required, and the level or category of the resource requiring protection.

A8.3.1.8. TEMPEST requirements as applicable IAW current AF TEMPEST guidance. (Submit, under separate cover, any classified requirements in accordance with AFI 31-401.)

A8.3.2. Mechanical Requirements:

A8.3.2.1 Design criteria for environmental control:

A8.3.2.1.1. List interior, (applicable maximum and minimum) operating temperature and humidity with allowable tolerances and gradients, (also list Air Force Technical Order equipment limitation where appropriate).

A8.3.3.1.2. Identify exterior critical or non-critical systems.

A8.3.2.2. Heat emission, BTU per hour: Give the BTU per hour heat emission for each piece of equipment which will be installed. Identify the location of the equipment by building and room number if multiple rooms are involved. If multiple locations are involved, use subparagraph to provide data for each room, floor, and building.

A8.3.2.2.1. Electronic equipment.

A8.3.2.2.2. List number of personnel.

A8.3.2.2.3. Other sources.

A8.3.2.3. Ventilation requirements: (if existing is adequate state so)

A8.3.2.4. Fire protection systems shall be IAW the Engineering Technical Letter (ETL) 93-5: Fire Protection Engineering Criteria - Electronic Equipment Installations - INFORMATION MEMORANDUM date 10 Feb 94.

A8.3.2.5. Special considerations: Air filtration and safety equipment)

A8.3.3. Electrical Requirements:

A8.3.3.1. Power. State requirements, in columnar form, for voltage, frequency, phase, number of wires, and total KVA or kW for electronics equipment, for primary AC, backup AC, and miscellaneous AC or for primary and backup DC. Specify voltage tolerances must be within + or - 5% and frequency tolerances must be within + or - 1/2 cycle for 50/60 HZ. Specify overseas bases must confirm this in writing.

A8.3.3.2. Technical Power Panels. Specify quantity of filtered and AC power panels to be provided or reserved. Include specific information on circuit breakers to be provided or reserved, quantity of each type, voltage, current rating, number of poles and use.)

A8.3.3.3. Non-Technical Power Panels. (Specify quantity of AC power panels to be provided or reserved. Include specific information on circuit breakers to be provided or reserved, quantity of each type, voltage, current rating, number of poles and use.)

A8.3.3.4. Lighting and receptacle requirements.

A8.3.3.5. Grounding requirements: Requirements must be in accordance with the latest issue of MIL-STD-188-124C, MIL-HDBK-419A, AFTO AFI 31-10-24, NEC, and MIL-HDBK-232A. NOTE: In case of conflict the MIL-STD 188-124C is the governing document for DoD facilities installations.

Engineers must identify the specific type of grounding system to be provided with references to the appropriate paragraph of each document that is applicable to the project requirements. When possible, provide a sketch or drawing of the grounding system desired.

A8.3.3.6. Lightning protection requirements.

A8.3.3.7. Obstruction lighting requirements.

A8.3.3.8. Fire detection.

A8.4. Special Services: Identify special items of support not covered elsewhere. Provide as much information as possible. Typical items are:

A8.4.1. Crane - Load radii, height to be lifted, weight to be lifted, number of days required, base provided or rental.

A8.4.2. Water trucks.

A8.4.3. Trenching, restoration, compacting, landscaping and ensure the base civil engineer is given the opportunity to decide on the method of crossing pavements, roads, walkways, and air fields by trenching, boring, jacking, or tunneling for underground utility installations. Trenching pavements will be the last resort and coordinated with the BCE. **Note**: Coordination of digging actions on bases, as a minimum these procedures should involve coordination through your planning functions, the base civil engineering and communications squadron commander.

A8.4.4. High reach vehicle, cherry picker.

A8.4.5. Shop services, welding, machine, carpentry, painting for known requirements.

A8.5. Restore the Work Location (This includes patching, painting, replacing floor, wall or ceiling tiles) to its original conditions.

A8.6. AF Form 103, Work Clearance Request: Upon receipt and subsequent approval of form, stake all buried utility lines which are responsibility of base civil engineering and located where trenching or excavation is proposed.

A8.7. EMRH and Laser Hazard Controls: As required by AFOSH STD 161-9, AFTO AFI 31Z-10-4, and AFOSH 161-10. Each PSA for installations with EMRH considerations will include a statement concerning hazards controls during installation. Specialized support by 738th EIS/EEE or other agencies must be specified.

A8.8. Design Drawings and Specifications: The 35%, 65%, and 95% design stages must be forwarded to the base communications unit, their parent Civil Engineering Office, and (enter the engineering activity) for review of technical adequacy of supporting structures in accordance with AFI 33-104. The (enter engineering activity) requires 7 working days from receipt of the drawings to return of comments to host civil engineering design section. **Note:** To ensure this critical need is met, recommend adding a statement that the BCE must forward a copy of the statement of work (SOW) which he used to hire the A-E Design Firm so that we can ensure that the A-E is on contract to provide those copies.

A8.9. Early Occupancy of New or Modified Structures: When conflicts between scheduled beneficial occupancy date of base support facilities and scheduled operational date of programmed CI equipment or facilities are known to exist. Document early access requirements needed for project installation and testing.

A8.10. Projects requiring DD Form 1391 documentation: Each facility requiring EEIC 529 construction funds must be identified on a separate DD Form 1391 with a unique project number in order to minimize problems associated with the minor construction statutory limit. If EEIC 592 expense funds are to be used, they must not only be identified on the DD Forms 1391, but must also be separately identified in the bid schedule for obligation and audit purposes. For each facility, identify the EEIC 529 and EEIC 592 costs on the same DD Form 1391.

Attachment 9

PSA ATTACHMENT 3

C4 SYSTEMS SUPPORT REQUIREMENTS

Project: (Insert applicable WIN)

(Insert Project Title)

(Insert applicable base or site)

Note: This is the recommended format. Omit items listed that are not applicable to your project.

A9.1. Circuit Requirements: Specify quantity, minimum technical characteristics, and termination points. Identify specific circuit segments that are leased or government owned if applicable. Consider the following items in developing circuit requirements; 2-wire or 4-wire, maximum allowable loop resistance if metallic circuits are required for remote transmitter keying or channeling control, allowable signal loss, frequency response, and data speed.

A9.2. Leased Equipment Requirements: List all requirements for C4 equipment, hardware, and services to be provided through lease action arranged by the host base program management activity. Include any requirements for contractors representative to be present during testing and acceptance procedures.

A9.3. Enter appropriate organization) must ensure a telecommunications service request (TSR) and work orders are initiated as required to provide the necessary transmission facilities. **Note:** When necessary to maintain commercial or administrative telephones in a controlled areas, criteria in NACSIM 5203 (C) will apply.

A9.4. Enter appropriate organization) must provide the following command furnished equipment and service ability inspection certificates for each item. Command furnished equipment will be installed by (enter appropriate organization.

A9.5. Enter appropriate organization must provide XD and XF Depot Level Repairable (DLR) items required to complete test and acceptance actions. Note: this statement should be included for all upward generated requirements.

A9.6. When a video mapper is to be installed, the PSA will task the operating agency to obtain maps, radar aeronautical video plates or charts.

A9.7. PSAs for Secure systems installations must include the following:

A9.7.1. The O&M unit responsible for maintenance of the secure systems installed by this project. Could be tasked to provide secure systems maintenance personnel, certified to accomplish operational checks, perform required maintenance and certify facility after installation.

A9.7.2. Applicable COMSEC items: (list only items from the following and advise the base during the pre-installation survey). The team chief will verify items required for operational test have been received by the COMSEC custodian or maintenance supply facility:

A9.7.2.1. COMSEC Equipment.

A9.7.2.2. COMSEC ancillary COMSEC, computer boards, and card extractors.

A9.7.2.3. Spare parts and circuit board kits, classified and unclassified.

A9.7.2.4. Secure system keys.

A9.8. TEMPEST: Requirements as applicable in accordance with current AF TEMPEST guidance. Submit, under separate cover, any classified requirements involved in accordance with AFI 31-401.

A9.9. Cable Work:

A9.9.1. Transfer jumpers as required during project installation.

A9.9.2. Remove all affected drop wire.

A9.9.3. Reserve Cables, as applicable, and pairs as applicable.

Note: The O&M units responsible for keeping cable records will survey and stake any buried communications cables where trenching or excavation is proposed.

A9.10. When reservation of existing underground cable ducts has been requested. The base will be tasked here to provide specific serviceable ducts and associated manholes in accordance with AFI 33-104. This is to include placement of one fourth inch (1/4") diameter nylon or polypropylene pull ropes.

A9.11. Climbing protection for tall structures: Each PSA for antenna towers and tall structures will include a statement as to the requirement for and the presence or absence of required safety climbing devices. The type of installed safety climbing devices will be stated to ensure installers will have compatible belts, lanyards and sleeves. The support base must provide necessary belts and sleeves if climbing device are not standard. If required and not installed at the time of site survey, the PSA must task the appropriate agency with providing safety climbing equipment.

A9.12. Special Equipment: When special equipment peculiar to the implementation testing phase is required to be supplied by the customer. The engineer will identify the equipment in this paragraph and reference any agreements made with the customer during site survey.

A9.13. Down Time: The engineer will consider impact the implementation of proposed project action may have upon customers operational C4 facilities. Any probability proposed installation procedure may interrupt or reduce the operational capability of existing C4 facilities will be discussed with the customer. Estimated down time and requirements for the customer to provide alternate or backup equipment will be documented in the PSA.

A9.14. The host base program management office will assist the team chief in obtaining and coordinating any work (contract, in house, or other agency) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire or intrusion alarm systems, or routine activities of the installation.

A9.15. The host base plans & Implementation office must obtain disposition instructions for all equipment items to be removed. This must be obtained from the MAJCOM item manager and forwarded to (implementing unit project manager/production controller).

A9.16. State requirements for primary and backup DC power requirements, when applicable.

Attachment 10

PSA ATTACHMENT 4

PSA DRAWING LIST

Project: (Insert applicable WIN)

(Insert Project Title)

(Insert applicable base or site)

NUMBER	SHEETS	REV	SHORT TITLE
(SAMPLE LISTING)			
VGWUB00113FP000	1	G	Floor Plan Layout
FRFTS50928AD000	1,3	B	Data Line Interface
FRFTS50928AD000	2	A	Data Line Interface
LDBWS00719AD000	1 thru 4	Orig.	Patch Module Red/Black
SKETCH 1			Antenna Platform Tower Sec S4

NOTE: The engineering support activity will use this list to reproduce and distribute the PSA with drawings.

Attachment 11

STATEMENT OF INTENT

(Typical Format)

(Enter Organization Letterhead)

(Date)

MEMORANDUM FOR: (Base CSO)

FROM: (Enter appropriate engineering complete address)

SUBJECT: Statement of Intent

1. This is a Statement of Intent (SOI) between (Engineer conducting site survey) and (OPR for host base program management activity at survey location) as it pertains to the (survey date) site survey for project (WIN number), (Project Title) at (Location).

2. The purpose of this SOI is to reserve the area(s) required for this project and to note the major allied support requirements needed for later installation of the project equipment at this location. The actual implementation of this SOI is contingent upon approval of the PSA by the appropriate authority.

3. The results of this survey are as follows:

a. Space to be reserved - (Specify exactly what areas are to be utilized and note whether these area(s) are existing or must be constructed and if they are vacant or occupied. If occupied, note what disposition is to be made of present occupants. When possible, include a sketch showing the space(s) to be reserved.)

b. Base support requirements - (Cover to the greatest extent possible, all allied support construction needed - civil, architectural, mechanical, electrical.)

c. Other - (Include any other information deemed necessary to identify the survey team findings such as preliminary equipment layouts, specific known problem areas, for underground cable installation, and cleaning of ducts.)

d. Disposition instructions for items being removed shall be obtained by the host base program management activity and forwarded to (project manager/production controller, office symbol, and DSN) and (the applicable E-I unit).

e. Verify availability of host base rescue teams for all confine space locations sited in this project.

	Engineer, Rank/Grade, USAF
	Engineer, Organization Section
Signature of base CSO or designate	(Signature of BCE or designate)
Organization/Office Symbol	Organization/Office Symbol
Telephone	Telephone

Attachments (list as needed)

Attachment 12

AFMC 149, C4 SYSTEMS PROJECT COVER SHEET

C4 SYSTEMS PROJECT COVER SHEET - COMMUNICATIONS/INFORMATION SYSTEMS PROJECT	
HOME UNIT ADDRESS	PREPARED BY
1. PROJECT DESIGNATOR(S)	DATE OF ISSUE
3. PROJECT TITLE AND LOCATION	
4. ORGANIZATION/FAS, PROGRAM MANAGER, AND DSN	
5. ORGANIZATION/FAS, PROJECT ENGINEER, AND DSN	SIGNATURE
6. ORGANIZATION/FAS, RELEASING ENGINEER, AND DSN	SIGNATURE
7. FUNCTIONAL DESCRIPTION	
8. ☐ UNUSUAL SHIPPING AND MARKING INSTRUCTION *(List Below)* ☐ NONE	
9. ASSOCIATED PROJECTS	
10. COMMENTS AND/OR DISTRIBUTION	
DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND THEIR CONTRACTORS FOR ADMINISTRATIVE OR OPERATIONAL USE, 1 MAY 1986. OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO THE ORIGINATOR.	

AFMC FORM 149, 20010201 *(EF-V1)*

Attachment 13

LIST OF MATERIEL (SECTION 1) EXAMPLE

Item #	NSN	Description	U/I	Qty	Unit Cost	Cost	Total Cost
1	5820010691880CS	Mounting Base	EA	1	$674.00	$674.00	$674.00
2	591--1-037152CS	Box Assy, Intercomm	EA	2	$674.00	$1,384.00	$2,022.00
3	5820010866217	Multiplexer, AN/FCC-98	EA	7	$1987.00	$13,909.00	$15,931.00
4	5820011217079	Multiplexer Set	EA	3	$19,951.00	$59,853.00	$75,784.00
5	5445013307079	Tower Section	EA	1	$44,000.00	$44,000.00	$119,784.00
6	5445013320627	Tower Section	EA	5	$8,500.00	$42,500.00	$162,284.00
7	598500975393ZE	Radome CW-603/FPS-77(V)	EA	1	$2,573.00	$2,573.00	$164,857.00
8	6660001189660	Console GP OA3491FPS77V	EA	1	$45,000.00	$45,000.00	$209,857.00
9	6660001189661	ANT GP OA-3493/FPS77V	EA	1	$2,000.00	$2,000.00	$211,857.00
10	6660001130781	RCVR TRANS RT639FTPS77V	EA	1	$4,000.00	$4,000.00	$215,857.00
		Total Cost					**$215,857.00**

Attachment 14

LIST OF MATERIEL (SECTION 2) EXAMPLE

Item #	Description	Part No.	U/I	Qty	Unit Cost	Cost	Total Cost
1	PE-89, 1500PR, 24AWG Copper cable	E-150024DFC		1400	$11.59	$16,226.00	$16,226.00
2	PE-89, 900PR, 24AWG Copper cable	E-090024DFC		3000	$7.12	$21,360.00	$37,586.00
3	PE-89, 600PR, 24AWG Copper cable	E-060024DFC		1800	$4.69	$8,442.00	$46,028.00
4	PE-89, 400PR, 24AWG Copper cable	E-040024DFC		800	$3.68	$2,944.00	$48,972.00
5	PE-89, 300PR, 24AWG Copper cable	E-030024DFC		2400	$2.37	$5,688.00	$54,660.00
6	PE-89, 200PR, 24AWG Copper cable	E-020024DFC		5000	$1.68	$8,400.00	$63,060.00
7	PE-89, 200PR, 24AWG Copper cable	E-020024DFO		800	$2.00	$1,600.00	$64,660.00
8	PE-89, 100PR, 24AWG Copper cable	E-010024DFO		4000	$1.31	$5,240.00	$69,900.00
9	PE-89, 100PR, 24AWG Copper cable	E-010024DFC		4000	$0.92	$3,680.00	$73,580.00
10	100PR, 24AWG Indoor copper cable	E-010024AAR		400	$1.27	$508.00	$74,088.00
11	100PR, 22AWG Copper cable	E-010022DFC		12000	$1.75	$21,000.00	$95,088.00
12	PE-89, 50PR, 24AWG Copper cable	E-005024DFC		9000	$0.60	$5,400.00	$100,488.00
13	PE-89, 50PR, 24AWG Copper cable	E-005024DFO		1700	$0.80	$1,360.00	$101,848.00
14	Building entrance terminal, 100PR	489BCS1-100		12	$378.65	$4,543.80	$106,391.80
15	Building entrance terminal, 25PR	489BCS1-25		22	$207.47	$4,564.34	$110,956.14
16	MDF Connector, 100PR, 30" stub	064095		24	$464.47	$11,147.28	$122,103.42
17	Protector modules, black	106805		14000	$3.48	$48,720.00	$170,823.42
18	Connector block, 25 PR	005810		50	$6.13	$306.50	$171,129.92
19	710 connectors, bridge, filled	058171		4	$45.47	$181.88	$171,311.80
20	Load coils	032686		3	$383.19	$1,149.57	$172,461.37
21	Splice closure 12.5" x 28.4"	B005219		23	$836.99	$19,250.77	$191,712.14
	Suggested source:						
	Anixter Bros - Federal						
	12379-B Sunrise Valley Drive						
	Reston, VA 20191						
	Voice (703) 227-0944						
	Fax (703) 227-0945						
	Attn: Chris Abele						

Attachment 15

TAB B COVER SHEET

TAB B

Table Of Contents

A15.1. Engineering Activity: (Insert Unit Designation and Location)

A15.2. Project No.: (Insert 4 Element Project Designator)

A15.3. Title: (Insert Project Title From CI Systems Project Cover Sheet)

A15.4. Contents: (Insert Applicable Information)

A15.4.1. Installation Description and Special Instructions

A15.4.2. Table 1 - Drawing List

A15.4.3. Table 2 - Publications List

A15.4.4. Table 3 - Special Tools and Test Equipment List

A15.4.5. Table 4 - Task List

A15.4.6. Task Instructions 1 through (# of instructions)

A15.5. Attachments

A15.5.1. Forms, Test Readings (list applicable).

A15.5.2. PSA with endorsements; w/o drawings.

A15.5.3. Project drawings, (see Table 1 for list).

Attachment 16

TAB B INSTALLATION DESCRIPTION AND SPECIAL INSTRUCTIONS

(Typical Format)

PROJECT: (Insert WIN portion of Project Designator)

A16.1. INSTALLATION DESCRIPTION

A16.1.1. FACILITIES AND LOCATION: (Provide a brief description of the facilities to be installed and where they are to be installed, i.e., building and room.)

A16.1.2. INTERFACE WITH EXISTING FACILITIES: (Describe how the facilities installed by the project will interface with the existing plant. Do not include this paragraph if it does not apply.)

A16.1.3. WORK BY OTHERS: (Describe the work to be accomplished by other activities in support of the project during the installation phase. Allied support specified in the PSA will not be included if it is to be completed prior to installation start. Be specific about the work and the activity performing it. **Note:** This paragraph will not be used to task other activities.)

A16.2. SPECIAL INSTRUCTIONS

A16.2.1. UNIQUE SAFETY REQUIREMENTS: (State any known unique safety requirements associated with the installation. If none, so state (example: Confine space rescue at remote manholes not supported by host base fire department).)

A16.2.2. EMC AND EMRH CONTROLS: (Describe EMC and EMRH controls during installation or immediately upon commissioning).

A16.2.3. (Add any special instructions deemed necessary).

A16.2.4. (Include any disposition instructions to deliver to a local base location as specified by the host base project manager/production controller for all removed items. Also, expand task list, (table 4) as required to implement these instructions.)

Attachment 17

TAB B DRAWING LIST

(Typical Format)

TABLE 1

DRAWING LIST

PROJECT: (Insert WIN portion of Project Designator)

Number	Sheet	Revision	Short Title

Notes:

1. Identify the applicable revision of each drawing sheet listed.

2. Attach all listed drawings to Tab B unless another source is specifically identified.

3. List all PSA drawings specifically referenced in the project package.

4. On the reproduction order, request two full size sets and three "C" size sets of project base coded drawings for team chiefs copies of the project.

Attachment 18

TAB B PUBLICATIONS LIST

(Typical Format)

TABLE 2

PUBLICATIONS LIST

PROJECT: (Insert WIN portion of Project Designator)

NUMBER SHORT TITLE

A18.1. Air Force Technical Order

A18.2. Manuals and Instructions

A18.3. Commercial Documents

Attachment 19

TAB B SPECIAL TOOLS AND TEST EQUIPMENT LIST

(Typical Format)

TABLE 3

SPECIAL TOOLS AND TEST EQUIPMENT LIST

PROJECT: (Insert WIN portion of Project Designator)

NSN/Mfg. & Part No	Description, Function, Purpose, etc. (list appropriate)	Quantity

Attachment 20

TAB B TASK LIST

(Typical Format)

TABLE 4

TASK LIST

PROJECT: (Insert WIN portion of Project Designator)

Task No.	Sequence No.	Task	Installation Reference	Location	Rm.

Notes:

1. Task Number is a consecutive numerical designator per task.

2. The sequence number specifies the order in which tasks should be accomplished. This may or may not be the same order as given in the task number.

3. Task is a simple, self-contained installation requirement that can be accomplished as an individual portion of the project.

4. Installation reference is a single document (commercial or Air Force standard) or task instruction.

5. Location column can be expanded to include a base, site, or area designator when the project covers requirements at more than one location.

6. For standardization all columns must be used even when a task instruction is written for every task or when the task numbers and sequence numbers are identical.

Attachment 21

TAB B TASK INSTRUCTION FORMAT

(Typical Format)

TASK INSTRUCTION No. (Insert applicable number)

(Insert title of the task - same as indicated on the Task List)

PROJECT: (Insert WIN portion of Project Designator)

A21.1. Task Description: (This is just an extension of the task title, except it should be a more elaborate description that further specifies the task to be accomplished.)

A21.2. References:

A21.2.1. Drawings

A21.2.1.1.

A21.2.2. Technical Orders:

A21.2.2.1.

A21.3. (Detail the task to be accomplished by instruction.)

Attachment 22

ABBREVIATED TAB B FORMAT

(Sample Format)

ABBREVIATED TAB B

A22.1. DRAWING LIST

ABCDB000015FP000	AMC Command Post, Floor Plan	Sht 1	Rev J-1
ABCDB00015WD000	AMC Command Post, DLAN Wiring Diagram	Sht 1	Rev B-1
LDBWS99999AD000	Standard Drawing, AN/XYZ-75	Sht 1,2	Rev K

A23.2. Publication List

TO AFI 31W4-2AN/XYZ75-2 Service Manual, AN/XYZ-75

A23.3. Task Instructions

A23.3.1. Reference Standard Drawing, AN/XYZ-75 for installation of equipment at location indicated FPI 1 on DWG ABCDB000015FPOOO.

Notes: In general the contents of the Abbreviated Tab B are:

1. Cover letter - provides same information as the C4 Systems Project Cover Sheet
2. List of Materiel
3. Information detailed in the sample format
4. Any other details the engineer feels need clarification

Attachment 23

AFMC FORM 150, RECORD OF EI PROJECT REVIEW

EI PROJECT REVIEW	DATE INITIATED	SUSPENSE DATE
TO: REVIEWING WORK CENTER	TO: WORKLOAD CONTROL/QUALITY ASSURANCE	TO: ENGINEERING ACTIVITY
PROJECT DESIGNATOR *(Four Elements)*		
TYPE OF REVIEW ☐ INITIAL ☐ FOLLOW-UP		COMPLETION DATE

CHECKLIST	S	D	NA	CHECKLIST	S	D	NA
A. TAB A				5. SPECIAL TOOLS & SPECIAL TEST EQUIP			
1. AFMC FORM 149 *(Project Cover)*				6. TASK LISTING			
a. GENERAL INFORMATION				7. TASK INSTRUCTIONS			
(1) PHONE/FAS OF PM, PE AND RE				a. COMPLETE & CLEAR INSTRUCTIONS			
(2) COMMENTS *(Block 10)*				b. PUBLICATION REFERENCES			
b. AMENDMENTS AND ECR/AS				c. DRAWING REFERENCES			
c. ASSOCIATED PROJECTS				d. FEASIBILITY OF IMPLEMENTATION			
2. LIST OF MATERIAL				e. MATERIAL ITEMS IDENTIFIED			
a. SECTION 1				f. TEST PLAN			
b. SECTION 2				8. TAB B ATTACHMENTS			
c. SECTION 3				a. TEST DATA SHEETS			
d. SECTION 4				b. PROJECT SUPPORT AGREEMENT			
e. SECTION 5				(1) SITING AND PROJECT INSTL DATA			
f. SECTION 6				(2) CIVIL ENGINEERING SUPPORT			
g. SECTION 7				(3) LOCAL COMM UNIT SUPPORT			
B. TAB B				(4) PSA DRAWINGS			
1. COVER SHEET				(5) HOST BASE SUPPORT			
2. INSTL DESCRIPT & SPECIAL INSTRUCTION				c. PSA INDORSEMENT			
a. DESCRIPTION OF PROJECT				d. PROJECT DRAWINGS			
b. SYSTEMS INTERFACING				(1) CORRECT DRAWINGS PROVIDED			
c. WORK BY OTHER ACTIVITIES				(2) SPECIFICATIONS			
d. SPECIAL INSTRUCTIONS				(3) CLARITY			
e. SAFETY				C. GENERAL			
3. DRAWING LIST				1. MANHOURS ASSIGNED			
4. PUBLICATIONS LIST				2. SCHEDULED COMPLETION DATE			
				3. OTHER			

WILL IDENTIFIED DISCREPANCIES ADVERSELY AFFECT IMPLEMENTATION ☐ YES ☐ NO

NARRATIVE

AFMC FORM 150, 20010205 (EF-V1) PREVIOUS EDITION IS OBSOLETE

NARRATIVE *(Continued)*

REVIEWER'S NAME AND GRADE	SIGNATURE
SECTION SUPERVISOR'S NAME AND GRADE	SIGNATURE

AFMC FORM 150, 20010205 ***(Reverse)***

Attachment 24

AF FORM 9, REQUEST FOR PURCHASE

REQUEST FOR PURCHASE				NO. 7779311
INSTALLATION				DATE 19950215
TO: CONTRACTING OFFICER 3201 GP/ACP				CLASS N/A
THROUGH 5201 GP/ACP				CONTRACT, PURCHASE ORDER OR DELIVERY ORDER NO.
FROM: *(Insert RC/CC, if applicable)* MSgt Keegan/Ext 36436				N/A
IT IS REQUESTED THAT THE SUPPLIES AND SERVICES ENUMERATED BELOW AND IN THE ATTACHED LIST, BE				
PURCHASED FOR 938 EIS	FOR DELIVERY TO MSgt Keegan, Bldg 6400			NOT LATER THAN

ITEM	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED	QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED TOTAL COST
001	Furnish trencher capable of trenching 7500 linear feet at a width of 6 inches and a depth of 30 inches. Furnish an operator to utilize trencher, under the control of the on-site Team Chief in charge of the project. Furnish a quality of #3 sand to cover a minimum of 5 inches (maximum 7 inches) the entire length of trenchline. Allow the EI team to place the cable after and electrically test it. Place 5-7 inches of additional #3 sand on top of the cable after successful testing. Backfill the entire trenchline and compact. Add more soil to leave a 6 inch berm the entire length of the trenchline. The contractor is scheduled to be on-site NLT 1 Mar 95. The actual trenching is to be completed by 5 Mar 95. The trencher operator must work closely with the Team Chief with regards to safety and work schedule. Working hours will be 8 hours. Lunch hour will be taken at the same time as EI team. Hours to be 0730 through 1630.	7500	Ft	$ 1.07	$ 8025.00
			TOTAL		$ 8,025.00

PURPOSE To provide trenching for buried cable. WIN#124A3DO		
DATE	TYPED NAME AND GRADE OF REQUESTING OFFICIAL	SIGNATURE
19950215	MARTY R. KEEGAN, MSgt	TELEPHONE NO. DSN 633-6436
DATE	TYPED NAME AND GRADE OF APPROVING OFFICIAL	SIGNATURE

I certify that the supplies and services listed above and in the attached list are properly chargeable to the following allotments, the available balances of which are sufficient to cover the cost thereof, and funds have been committed.

ACCOUNTING CLASSIFICATION	AMOUNT $

DATE	TYPED NAME AND GRADE OF CERTIFYING OFFICIAL	SIGNATURE

AF FORM 9, MAR 77 *(EF-V2)*

INSTRUCTIONS FOR COMPLETING AF FORM 9

Purpose of this form is to provide an audit trail for all funds expended on a project and to effect payment to the service provider.

Block	Instructions
No	This will be provided by the contracting activity.
Installation:	Enter the location for which the Fund Cite was issued.
Date:	Enter the date the purchase request (PR) is prepared.
To:	Base Contracting Officer
Class:	If the requirement is for supplies, enter the Federal Supply Classification (FSC) otherwise enter "N/A."
Through:	Enter the organizational symbol(s) of offices through which the PR is routed before being accepted in the procuring office (such as the Accounting and Finance Office).
From:	Enter the team chief's rank, name and local duty phone.
Contract:	Enter "N/A."
Purchased For:	Identify activity for which procurement is being made.
For Delivery To:	Give specific location, including building number, person to whom delivery will be made (if applicable).
Not Later Than:	The specific Julian date(s) required is to be entered in this block. Terms such as "75 days" or "As soon as possible" are not acceptable.
Item:	Self-explanatory. Always start with 001.
Description of Material or Services to be Purchased:	(a) Enter the NSN for supply items, applicable reference to mandatory Federal/Military T.O. specifications. Include complete descriptions, supported by statements/specifications and drawings, as applicable. Enter manufacturer's model/part/serial number or other Identifying numbers, as applicable. (b) For non-personal services, data, etc.(service contracts or rentals), detailed descriptions via work statement/specifications, if necessary, will be provided. If known, include suggested source(s).
Quantity and Unit:	Self-explanatory.
Estimated Unit Price:	Enter the estimated unit price and multiply times the estimated total quantity to arrive at Estimated Total Cost: the estimated total cost.
Total:	Enter the accumulated estimated grand total from individual item total costs above or on continuation sheets.

Purpose:	Enter the purpose for which procurement is requested (such as project code name or project number and intended use of item or service).
Date:	This is the date that the team chief signed the form.
Name and Grade	Self-explanatory.
Date/Approving	Self-explanatory.
Official:	The approving official will depend on the amount being spent. Contact your unit resource advisor, or the base contracting office for guidance.
Signature:	Self-explanatory.
Accounting Classification Amount:	The team chief will normally certify and annotate the classification accounting on the AF Form 9 from the AF Form 616 issued by the parent unit.
Certifying Official:	Team chief.
Commander or Designee	Self explanatory

Notes:1. The host base contracting office will assist in preparing the form.
2. If the request deviates from the guidance provided, contact your resource advisor for assistance.

Attachment 25

AF FORM 15, USAF INVOICE

"WHEN USING BALL-POINT PEN PRESS HARD TO ASSURE LEGIBILITY ON ALL COPIES"

UNITED STATES AIR FORCE INVOICE *(See instructions on Reverse)*	1. DATE	C
2. PAY TO *(Name and Address of Payer)*	AIRCRAFT DATA	
	5. ORGANIZATION	6. hOME STATION
3. purchased at *(City, State, Country or refer to Flip)*	7. MAJOR COMMAND / 8. M/D/S OR VEHICLE ID / 9. SERIAL NO.	
4. SEND BILL TO:	10. OPERATIONS, FLIGHT, OR TRAVEL ORDER NUMBER AND DATE OF ORDERS.	

11. ARTICLES/SERVICES	(TO BE COMPLETED BY VENDOR ONLY) 12. QUANTITY	13. UNIT	14. UNIT PRICE	15. TOTAL
	TAX *(If not included in unit price)*			
			TOTAL	

INSTRUCTIONS TO SELLER

16. *For payment without further action on your part, complete copy 1 of this form and return to the purchaser. Payment will be made directly to you after return of this document to home station.*

If you wish to retain original copy of this form, you will not be paid until submission of the original of this form or an invoice with the original copy of this form to the address in block 4:

PURCHASER'S CERTIFICATION

17. Pursuant to authority vested in me. I certify that the supplies enumerated above or on an attached list have been received in good condition and in quantities as stated; that the services enumerated have been satisfactorily performed. That the supplies or services were purchased in an emergency for the maintenance, operation, or protection of Government equipment and were necessary for the public service.

☐ I have retained original.

☐ Seller has retained original. Company invoice payment will be made when invoice(s) supported by a copy of AF Form 15 is received.

VENDOR'S DELIVERY TICKET NUMBER IS *(If applicable)* _____

18. PRINTED NAME OF PURCHASES	19. GRADE	20. SQUADRON	21. SIGNATURE

VENDOR'S CERTIFICATION

I certify that the above bill is correct and just, and that payment thereto has not been received.

22. PRINTED NAME OF SELLERS REPRESENTATIVE	23. SIGNATURE	24. DATE

VALIDATING OFFICIAL'S CERTIFICATION

25. PRINTED NAME	26. GRADE	27. ORGANIZATION	28. SIGNATURE	29. DATE

30. ACCOUNTING AND APPROPRIATION DATA	☐ PAYMENT ☐ COMPLETE ☐ PARTIAL ☐ FINAL	34. PAID BY
	APPROVED FOR = $	
	EXCHANGE RATE = $ 1.00	
	ON *(Name of Bank)*	
Pursuant to authority vested in me, I certify that this voucher is correct and proper for payment.	33. AMOUNT VERIFIED	
31. SIGNATURE AND TITLE OF CERTIFYING OFFICER / 32. DATE	CORRECT FOR $	
	D.O. VOUCHER NO.	
	CHECK NO.	

FOR PURCHASES IN FOREIGN COUNTRIES INDICATE: Type of currency in pounds, francs, lire, etc.

AF FORM 15, 19910801 *(EF-V2)* PREVIOUS EDITIONS WILL BE USED.

A25.1 Purpose of this form is to provide a record of vehicle support/maintenance services provided by civilian agencies.
A25.2. Team chiefs are authorized to make purchases using this form. It will be prepared and forwarded IAW AFI 23-202 and the instructions of the EI Unit.
A25.3. DO NOT USE PENCIL. Ensure that all copies are accurate, legible, and signed by you and the vendor.
A25.3.1. Give the vendor two copies of the form and get an itemized bill of sale. Advise the vendor that no additional paperwork is necessary.
A25.3.2. Deliver original form with three copies, and the bill of sale to your supervisor, or as directed by your unit. Ensure that these forms arrive at your unit as soon as possible so that the vendor is promptly paid. **Note:** If vendor decides to retain original, advise that payment will not be made until original is delivered to the addressee in block 4.
A25.4. The following instructions to complete AF Form 15 are extracted from the reverse side of the AF Form 15 IAW AFI 23-202; however, the sequential order is rearranged, and additional information **is provided where appropriate.**

Item	**Entry**
1	Date of purchase.
2	Name and check-mailing address of payee (vendor).
3	Appropriate geographic location information.
4	Team chief: enters “DEPT OF THE AIR FORCE, Your Unit (AFMC), and complete address.” ANG EI team chief: enters - “MIRESP unit if purchase supports project being implemented. If purchase is for repair of ANG vehicle enter name of ANG parent unit.”
5	Team chief’s parent unit. (738 EIS, 219 EIS, etc.)
6	Enter name of installation where your unit is located.
7	Active duty enter “AFMC;” Air National Guard enter “ANG.”
8	If purchase is materiel for project, enter NA. If purchase is for repair of vehicle, enter type of vehicle and odometer reading.
9	Enter NA for materiel purchases. Enter serial number of vehicle if applicable.
10	Enter PROJECT NUMBER, control number and date obtained from issuing authority.
11	Enter description of vendor provided services or materiels purchased. ***NOTE***: Purchases for material and services (crane rental, trenching) will not be included on the same AF Form 15. An AF Form 15 must be prepared for each type purchase. Emergency vehicle repair data for both labor and material will be included on the same AF Form 15.
12-15	Enter NA for services; however, total price for services should be entered in bottom total block. For material purchases enter quantity of item purchased(block 12), unit of issue(block 13), unit price (block 14), and total cost of each type item purchased (block 15). Enter tax charged for purchase. Add material cost column(block 15) and combine with tax to derive amount to be entered in bottom total block.

17	Check the first box if the team chief retains the original AF Form 15. If the payee retains original AF Form 15, check the second box. Also, enter the payee's bill of sale number or delivery ticket number in space provided. ***NOTE***: Bill of sale or delivery ticket must be attached to AF Form 15 copy that the team chief delivers to parent unit.
18	Enter name of team chief (purchaser).
19	Enter grade/rank of purchaser.
20	Enter parent unit designator.
21	Purchaser must sign in this block.
22	Enter name of sellers representative (not company name).
23	Sellers representative must sign in this block.
24	Date of signing by sellers representative.
25-34	Leave blank. They will be completed by the parent unit resources advisor (person who issued control number).

Attachment 26

AF FORM 1146, ENGINEERING CHANGE REQUEST/AUTHORIZATION

ENGINEERING CHANGE REQUEST/AUTHORIZATION

TO: *(Address of Engineering Activity)*	FROM: *(Address of Originating Activity)*	1. ECR/A NO:
38 EIW/EIT 44018 Hilltop Rd, Tinker AFB OK 73145-2713	(TDY Location, Customer Address)	2. STATUS ☐ EMERGENCY ☒ ROUTINE

3. ORIGINATOR

TYPED NAME:	SIGNATURE:	PHONE NO:	DATE:
MSgt ROBERT K.		633-5261	

4. INSTALLATION CHANGE DESCRIPTION

AFFECTED DOCUMENTS:	NUMBER:	STATUS:	DATE:
T1, PSA, DWGS	1000A8LO-TYFR-0011-B	Installation	19950711

5. REASON FOR CHANGE *(Attach additional sheet, if necessary.)* TI-7, para 5, calls for the installation of a CCTV monitor on the east of room 7IAW drawing number FGWB00738fp201, Sheet 1 of 3. If installed IAW the drawing, the monitor will not be from all parts of the room.

6. NATURE OF CHANGE *(Attach additional sheet, if necessary.)* As shown in the attached sketch, we propose to move the outlet for the monitor in room 7, Bldg 1812, from its present location on the east wall, 5 feet from the northeast corner. Extra material will not be required. Eleven feet of coaxial and power cable will be cut from the circuit. Additonal manhours will not be required.

7. ENGINEERING CHANGE AUTHORIZATION

DATE:	ORGANIZATION:	ACTION: ☐ APPROVED ☐ PARTIALLY APPROVED ☐ DISAPPROVED	
TYPED NAME:	SIGNATURE:	PHONE NO:	DATE:

COMMENTS:

AF FORM 1146, 19950901 *(EF-V2)* PREVIOUS EDITIONS ARE OBSOLETE.

INSTRUCTIONS FOR COMPLETING AF FORM 1146

A26.1. Purpose of this form is to document formal engineering change requests/authorizations and approval of same.

A26.2. The team chief will coordinate all changes with the host base communications unit prior to submitting an AF Form 1146 to make them aware of problems encountered or the necessity for changing any portion of the planned facility configuration.

A26.3. The team chief will complete the heading and blocks 2 through 6:

TO: Appropriate Engineering Activity. *NOTE*: If in doubt of the correct FAS of the appropriate engineering activity, contact your unit workload control.

FROM: TDY Location, Customer Address

Block 1. Leave Blank.

Block 2. Indicate the urgency of the change.

Block 3. Name of the originator (team chief) signature, phone number where he can be reached, and date the form was initiated.

Block 4. AFFECTED DOCUMENTS: Identify the portion of the project package affected by the change, (Task instructions, PSA, drawings (put drawing numbers in Block 5).

NUMBER: Project Designator

STATUS: Installation, Removal, PSS, etc.

DATE: Date of the basic project package (AFMC Form 149, **C4 Systems Project Cover Sheet**)

Block 5. State briefly, in narrative form, the reason for the change. Reference the applicable paragraph in the TIs and the affected drawing number.

Block 6. Give a recommendation for corrective action to resolve the problem cited in Block 5. Include a statement to show any change in material or man-hours and statements indicating whether material is locally available. Attach a sketch of the recommendation to the original copy of the AF Form 1146. **Note:** Ensure that all attachments to the AF Form 1146 are identified. Include the date of the AF Form 1146, WIN, and attachment number on each attachment.

Block 7. To be filled out by the project engineer.

A26.4. Prepare 3 copies:

a. Send the original to the Engineering Activity, with an info copy to the responsible EI project manager/production controller.

b. Provide one copy to the local host base communications unit project manager/production controller.

c. Keep one copy for your records.

Attachment 27

AFMC FORM 151, ELECTRONICS INSTALLATION TEAM PREDEPLOYMENT CHECKLIST

ENGINEERING INSTALLATION TEAM PREDEPLOYMENT CHECKLIST	DATE
PROJECT DESIGNATOR	TEAM CHIEF'S NAME
CUSTOMER UNIT/BASE	WORKCENTER SUPERVISOR NAME

SECTION I WORKCENTER SUPERVISOR RESPONSIBILITIES	DATE ACCOMPLISHED AND INITIALS
1. SELECT TEAM CHIEF AND INITIATE AFMC FORM 152	
2. BRIEF TEAM CHIEF IAW AFMCI 33-104	
3. ENSURE AVAILABILITY OF:	
A. QUARTERS AND MESS	
B. TRANSPORTATION AND VEHICLE SUPPORT FOR THE TEAM	
C. OBTAINING PAY AND MAIL FOR THE TEAM	
4. SUBMIT REQUEST FOR TDY ORDERS	
A. EXCESS WEIGHT ALLOWANCE	
B. DESIGNATE RESPONSIBLE PROPERTY OFFICER	
5. DETERMINE MEANS FOR FUNDING FOR LOGISTICS	
A ESTABLISH AF FORM 616 *(If required)*	
B. ADVISE TEAM CHIEF OF $50.00 REIMBURSEMENT FOR MATERIEL	
C. ADVISE TEAM ON USE OF AF FORMS 9 AND 15/IMPAC CARD	
6. BRIEF TEAM CHIEF ON TDY AREA TRAVEL RESTRICTIONS	
7. BRIEF TEAM CHIEF ON TERRORIST THREAT	
8. ENSURE NOTIFICATION OF ARRIVAL MESSAGE IS SENT IAW AFMCI 33-104	
9. ADVISE TNG PGM ADMINISTRATOR OF TEAM CHIEF NOMINEES EVAL REQUIREMENTS *(If applicable)*	
10. OTHER *(Local Requirements, Passports, Immunizations, etc.)*	
SECTION II TEAM CHIEF'S RESPONSIBILITIES	
1. REVIEW JOB FOLDER WITH SUPERVISOR	
2. CONDUCT TEAM BRIEFING IAW AFMCI 33-104	
3. DETERMINE SPECIAL EQUIPMENT/TOOL REQUIREMENTS	
A. CHECK FOR AVAILABILITY	
B. INSURE SERVICEABILITY AND CALIBRATION FOR DURATION OF TDY	
4. ENSURE TEAM MEMBERS ARE AWARE OF	
A. TRAVEL ITINERARY	
B. RESPONSIBILITY FOR PERSONAL OBLIGATIONS	
C. PECULIAR SAFETY HAZARDS, TERRORIST THREAT	
D. PER DIEM AND BILLETING COSTS AND OBLIGATION TO PAY CHARAGES UPON RECEIPT OF TDY FUNDS	
5. OBTAIN AND INVENTORY ADMINISTRATIVE KIT	
6. OBTAIN TECHNICAL DATA, STANDARD INSTALLATION PRACTICE AND EQUIPMENT TECHNICAL ORDERS	
7. CHECK TECHNICAL ORDER NUMBERICAL INDEXES FOR TCTOs ON EQUIPMENT BEING INSTALLED	
8. ENSURE ALL TEAM MEMBERS HAVE MILITARY DRIVER'S LICENSES FOR VEHICLES BEING UTILIZED	
9. CHECK MILITARY VEHICLES	
A. SERVICEABILITY	
B. AVAILABILITY OF SERVICING TECHNICAL ORDERS	
C. SPECIAL VEHICLE REQUIREMENTS	
10. CONDUCT INSPECTION OF TEAM AND EQUIPMENT IAW AFMCI 33-104	
11. PROCESS THROUGH UNIT TRAINING OFFICE - OBTAIN AF FORM 623s *(Training Records)*	
12. PROCESS THROUGH INSTALLATIONS FLIGHT CC	
A. OBTAIN SAFETY BRIEFING	
B. OBTAIN SAFETY KIT AND PORTABLE SAFETY BOARD, IF REQUIRED	
13. ENSURE TEAM MEMBERS OUTPROCESS UNIT/BASE IAW LOCAL PROCEDURES	

ALL ITEMS HAVE BEEN ACCOMPLISHED ON THE DATES INDICATED	
TEAM CHIEF NAME *(Type/Print)*	DATE
TEAM CHIEF SIGNATURE	

AFMC FORM 151, 20010205 *(EF-V1)* **PREVIOUS EDITION IS OBSOLETE**

Attachment 28

AFMC FORM 152, ENGINEERING INSTALLATION TEAM CHIEF LOG

ENGINEERING INSTALLATION TEAM CHIEF LOG

TEAM CHIEF *(Name, Grade, Organization, Work)*	LOG OPENING DATE	LOG CLOSING DATE

1. IDENTIFICATION

PROJECT DESIGNATOR	TYPE JOB *(TACAN, Control Tower, Rehabilitation, etc).*	
CUSTOMER ADDRESS/PHONE	ACTUAL WORK LOCATION	TEAM CHIEF OFF DUTY ADDRESS

2. TRAVEL INFORMATION

TIME AND DATE		TRAVEL MODE	TRANS SUPPORT		
DEPARTED	ARRIVED		SAT	UNSAT	N/A
HOME STATION	TDY LOCATION				
TDY LOCATION	HOME STATION				

3. VEHICLES

DESCRIPTION	REGISTRATION NUMBER	OWNER		CONDITION	MILEAGE	
		CUST	EI		DEPARTURE	RETURN

4. TEAM COMPLEMENT

GRADE	NAME	AFSC

5. REQUIRED COORDINATION

AGENCIES		DATE AND INITIALS	
		OUT	IN
EI UNIT	TRAINING		
	VEHICLE CONTROL		
	FIRST SERGEANT		
	SAFETY		
		IN	OUT
SUPPORT BASE	VEHICLE OPS		
	BASE SUPPLY		
	SAFETY		
	SECURITY POLICE		
	BIOENVIRONMENTAL		
CUS TOMER	COMMANDER		
	PROGRAMS OFFICER		
	CHIEF OF MAINTENANCE		
	QUALITY CONTROL		

6. BASE/CUSTOMER SUPPORT

TYPE	RATING

7. SITE VISITS/INSPECTIONS (QA, OC, etc).

TYPE	DATE

8. DATE JOB

STARTED	COMPLETED

9. TEAM CHIEF

NAME AND GRADE *(Type/Print)*	SIGNATURE

10. TEAM CHIEF SUPERVISOR

NAME AND GRADE *(Type/Print)*	SIGNATURE

AFMC FORM 152, 20010205 *(EF-V1)* **PREVIOUS EDITION IS OBSOLETE**

REMARKS *(If additional space is required, continue on plain bond paper)*

12. **DAILY LOG**

INSTRUCTIONS

Enter DAILY a brief description of work accomplished, difficulties encountered, etc. *(NOTE: It is important that you include the brief description of difficulties encountered even though you may have resolved them yourself and need not further assistance. The information you provide will become part of the job record and may help prevent recurrence of problems on future jobs.)* *(If additional space is required, continue on plain bond paper.)*

DATE	COMMENTS

AFMC FORM 152, 20010205, *(Reverse)*

INSTRUCTIONS FOR COMPLETING EI TEAM CHIEF LOG

A28.1. Purpose of this form is to provide a chronological record of events as an audit trail for all action involved in the installation of a project.

A28.2. General. Prepare EI Team chief Log in one copy. It will be legibly printed in ink or typed. (See Notes) Use bond paper or a computer generated form as a continuation sheet. The PROJECT NUMBER will be the first line entry on each continuation sheet.

A28.3. Initiation. The form will be initiated by the workcenter supervisor concurrent with tasking of the team chief. The work center supervisor will also initiate a separate form for each project if more than one project is to be implemented during deployment. The team chief will initiate the form if he/she is tasked with another project while deployed.

A28.3.1. Team chief's name, grade, organization and workcenter symbol are entered in the "Team Chief" block. On team chief replacements, place "See Remarks" in this block, then enter the new team chief's information and a comment of the team chief replacement in block 11.

A28.3.2. Log Opening Date Block: Date the log was initiated.

Part 1 - Identification. Enter the appropriate information:

a. PROJECT NUMBER. Enter 4 - element project or maintenance work order number.

b. Type Job. (Example: 600 pair cable installation, (nomenclature of equipment, etc.).

c. Customer Address and Phone Number. Customer unit designator, base, and extension number.

d. Actual Work Location. Enter building number or work area (Example: Bldg 412 or 600 Area, etc.). If not enough room continue in Remarks Section.

e. Team Chief Off duty Address. Team Chief will inform the workcenter supervisor of off-duty address (Example: Airman transient quarters, Building 920, Ext 2142); or off-base quarters: motel name, address, city, and phone number.)

Part 2 - Travel Information:

a. Time and Date. Use local time and date.

b. Travel mode. Use descriptive abbreviations (Com Air, Govt Aircraft, Gov Motor Vehicle (GMV), POV, etc.). Unsatisfactory transportation support must be explained in part 12. If more than one mode, place "see remarks" and explain in block 11.

Part 3 - Vehicles:

a. Description/Type. (example: high/low profile, 6 PAX, telephone maintenance, etc.)

b. Registration No. Self-explanatory.

c. Owner. Indicate whether vehicles were EI or customer furnished.

d. Condition. Good, fair, or poor. Annotate discrepancies on AF Form 1800 or AF Form 1806, as appropriate.

e. Mileage. Record odometer reading before departing home station and on actual return to home station. For customer owned vehicles and for vehicles either received from or sent to home station, record odometer readings at time of receipt and turn in of vehicles.

Part 4 -Team Complement. List only original team members. If more room is needed or if team members are replaced, enter in remarks, block 11.

Part 5 - Required Coordination. The workcenter supervisor will identify each agency which requires coordination. Date entries will be numerical day/month.

Part 6 - Base/Customer Support. Rate as Outstanding, Excellent, Satisfactory, Marginal or Poor. Marginal or Poor ratings must be explained in Part 11, (Remarks).

Part 7 - Site Visits/Inspections. List work site visits by other than the customer job monitor. Normally, the type of visits includes base/unit commander, safety, staff/supervisory, in progress/final QA , etc.

Part 8 -Date Job: Started: Date work starts at the deployed location. Completion: Date work stops at the TDY location.

Part 9 - Team Chief. This will be the Team Chief who in-briefs the work center supervisor.

Part 10 - Team Chief's Supervisor. The workcenter will review the form(s) upon receipt, take appropriate steps on problem/action items in Blocks 11 & 12. He/she will enter the date of review following his/her signature in part 10 and also enter the Log Closing Date located in the upper right hand corner of the form.

Part 11 - Remarks. This block will be used to document information required to clarify the Installation Team Log and Job Summary. e.g., change of team chief, team complement, or when additional space is required.

Part 12 - Daily Log. Self-explanatory.

Notes:

1. When a PSS is performed and job start is consecutive use a single EI Team Chief Log to cover both. If there is a break between these two phases, separate forms will be initiated for the survey and the actual implementation. To differentiate between forms initiated against the same PROJECT NUMBER, the form for the PSS will be marked "PSS" in Part I "Type Job" block.

2. The original copy of the EI Team Chief Log initiated for a PSS, cable/antenna maintenance requirements will be retained in the job folder until completion of the installation or work action. The annotated team log/job summary will be locally reproduced and a copy provided the team chief prior to his/her departure to accomplish the work. A review of the completed form accomplished during the survey will be part of the pre-deployment briefing.

3. For in-house workload, use of EI Team Chief Log is optional.

Attachment 29

AF FORM 2519, NOA VERBAL COORDINATION RECORD

ALL PURPOSE CHECKLIST	PAGE 1 OF 2 PAGES		
TITLE/SUBJECT/ACTIVITY/FUNCTIONAL AREA NO VERBAL COORDINATION RECORD, WIN:	OPR IS	DATE	
NO. ITEM *(Assign a paragraph number to each item. Draw a horizontal line between each major paragraph.)*	YES	NO	N/A
PROJECT SUPPORT ITEMS PSA: Is all CE support (Atch 2) complete? Was a physical inspection of job site accomplished? Is all C-CS support (Atch 3) complete? Deficiencies/comments: MATERIEL: Have all shipments arrived? Damaged? Are boxes missing? Is all contractor/customer-supplied equipment installed? Are all cable shipment MCL requirements met? Has unit procured "C" coded items? Deficiencies/comments? BILLETING: Are on-base quarters available? Are contract quarters available? Accept American Express? Rate Per Day _____ Are American Express ATMs available? On Base ( ) Off-Base ( ) Comments: TRANSPORTATION: Are required vehicles available? If yes, type/number reserved: If required, is adequate govt trans available at TDY location? Is off-base use for meals/qtrs allowed? Is FAD Code II priority repair available? SAFETY: Has an asbestos material report been accomplished? Results of report: Is a safety board available? Are climbing equipment/protective devices installed? Are there any confined space criteria CAT A/B MHs? Is there a waste disposal facility available? Comments: SECURITY: Are proposed team member clerances adequate? Are badges required? Comments/minimum security level required:			

AF FORM 2519, 19911101 *(EF-V3)* PREVIOUS EDITION WILL BE USED.

PAGE 2 OF 2 PAGES

NO.	ITEM (Assign a paragraph number to each item. Draw a horizontal line between each major paragraph.)	YES	NO	N/A
	TEAM SUPPORT: Is office space, desk, telephone, available for team chief? Is a secure storage area available for tools and equipment? Is a work center project coordinator assigned (AFI 21-116)? NAME _____ PHONE: _____ EXERCISES: Will team be exempt? Comments: COMMUNICATIONS: Is adequate DSN access available? Is an IBR frequency available? Is a beeper available? Comments: LIMITING FACTORS: Is the ISSL complete? Will team have uninterrupted access to work site? Will equipment downtime be required? Can uninterrupted operational tests be conducted? Comments: COORDINATION EFFECTED WITH: NAME/GRD: _____ DSN: _____ ORG/FAS: _____ COORDINTION EFFECTED BY: NAME/GRD: _____ DSN: _____ ORG/FAS: _____			

AF FORM 2519, 19911101 *(EF-V3) (REVERSE)*

Attachment 30

NOTICE OF ARRIVAL

NOTICE OF ARRIVAL (NOA) E-MAIL

Subject: (In the E-mail subject line, enter the project number and short project title)

Send E-mail to the customer POC; send info copies to the MAJCOM POC, the STEM-B, the project manager/production controller, project engineer, and your installation superintendent/branch chief.

On the first line of E-Mail text, use all capital letters to state TDY purpose, i.e., 738 EIS CABLE TEAM ARRIVAL TO IMPLEMENT C4 PROJECT FIBER CABLE INSTALLATION AT EGLIN AFB FL.

OPENING PARAGRAPH. *Enter the following.*

1. The following 738EIS EI team members are scheduled to arrive your base O/A __(DATE)__ to implement the subject project. we estimate a project completion date of __(DATE)__.

TEAM CHIEF SEX RANK/GRADE AFSC SSAN SCTY CLNC

(Enter Team Chief data)

TEAM MEMBERS

(List all Additional Team Members)

Note: If NOA is for additional team members joining team already on site, use the following in lieu of previous opening statement: THE FOLLOWING 738EIS EI TEAM MEMBER(S) (IS/ARE) SCHEDULED TO ARRIVE YOUR BASE O/A ___(DATE)___ TO JOIN EI TEAM PRESENTLY ON-Site: (list additional team members as outlined above)

Paragraph 2. (This paragraph should include a statement outlining where the team chief will report, appointments requested, or previously scheduled via telephone. It should also expand on the purpose of the deployment stated in the subject line. See examples below)

Example Only: (You may construct sentences using your own words.)

2. On arrival, our team chief will report to your C4 Plans and Implementation for coordination, inbriefing, and scheduling of appointments with your project coordinator, the base safety officer and, if desired, the base or unit commander. A preimplementation survey will be performed prior to job start.

Paragraph 3. This paragraph will be used to confirm support requirements previously coordinated by telephone using the initial NOA telephone checklist. It will cite date, name, rank/grade, organization, and office symbols of all persons participating in the initial telephonic coordination. If telephonic coordination was not performed, request only those support items applicable to the subject project/deployment. Enter only those items confirmed on your checklist. See example below.

Example: The following team requirements and host base support items have been confirmed as complete or adequate per telecon between MSgt Doe, 738EIS/ISMC, AND CMS Jones, 81CS/XP, on 21 Mar 96.

A. Our team will be quartered on base. (off base using contract quarters) (off base non-contract quarters). Private accommodations with telephone for our team chief has been secured. (Construct sentence as applicable).

B. All boxes of materiel cited on the project LOM have been received and inspected, no damage (damage, minor/major) was observed. **Note:** If there is damage, identify the problem and explain how you are planning to resolve the issue, if the deployment schedule will continue.

C. A secure storage area has been designated for project materiel, team tools, and equipment.

D. All host base support cited in the project support agreement has been inspected and completed according to specifications. (will be completed prior to team arrival or will be performed during project implementation and will not cause project delays). **Note:** If there is concern about a particular host base support item not completed, state your concerns and possible consequences if team will be deployed anyway. Construct sentence as applicable.

E. The following vehicle support has been confirmed: (list number and type of vehicles reserved, if confirming base support), or team will travel via 738 EIS vehicles. (list vehicles, maintenance, fuel, fad ii support confirmed if 738 EIS vehicles will be used at the work site).

F. The work site has been inspected for asbestos material and a report will be made available to our team chief upon arrival.

G. A safety board will be provided at the job site.

H. All climbing equipment and safety protective devices are installed IAW AFOSH STD 91-*50* (If not, confirm that a MAJCOM waiver will be provided to the team chief).

I. All manholes associated with this project have been categorized and identified according to the confined spaces criteria In AFOSH STD 91-25.

J. A hazardous waste disposal facility has been identified and is available locally that can accept (Enter name of items that will require special disposal)

K. Security clearances listed for team members are adequate and uninterrupted access to the work site is confirmed. (If line badges or escorts are required confirm availability.)

L. Equipment downtime (list equipment type, inclusive dates and times) has been confirmed.

M. DSN access (and IBR Frequency) has been reserved or confirmed.

N. The ISSL is complete. (If not, confirm that it will not be a factor in getting the completion document signed.)

O. Uninterrupted operational tests can be performed. (enter any other support you may have confirmed such as test equipment, arctic clothing, augmentation, admin work space for the team chief, etc.)

P. Customer is responsible to fund for and procure all XD/XF items needed to troubleshoot or repair installed/relocated equipment.

Paragraph 4. Terminate the message with a statement such as:

4. Please inform us of any support status changes which could impact project implementation. Our POC is (enter name, rank/grade, office symbol, and DSN for POC).

Attachment 31

AF FORM 103, BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST

BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST
(See Instructions on Reverse)

DATE PREPARED: 19950510

1. Clearance is requested to proceed with work at Corner of Davis and First Blvd

on Work Order No. 1234a1do , Contract No. N/A , involving excavation or utility disturbance per attached sketch. This area ☐ has ☐ has not been staked or clearly marked.

2. TYPE OF FACILITY/WORK INVOLVED

☐	A. PAVEMENTS	☐	D. FIRE DETECTION & PROTECTION SYSTEMS				☐	G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW
☐	B. DRAINAGE SYSTEMS	☐	E. UTILITY	☐	OVERHEAD	☐ UNDERGROUND	☐	H. SECURITY
☐	C. RAILROAD TRACKS	☐	F. COMM	☐	OVERHEAD	☐ UNDERGROUND	☐	I. OTHER

3. DATE CLEARANCE REQUIRED	4. DATE OF CLEARANCE	
19950517	19950701	
5. SIGNATURE OF REQUESTING OFFICIAL	6. TELEPHONE NO. Ext 1234	7. ORGANIZATION 838 EIS

8. BASE CIVIL ENGINEERING — ORGANIZATION	REMARKS *(Use Reverse for additional comments)*	REVIEWER'S NAME AND INITIALS
A. ELECTRICAL DISTRIBUTION	Underground primary in area. Call before digging	
B. STEAM DISTRIBUTION	Area is clear	
C. WATER DISTRIBUTION	Area is clear	
D. POL DISTRIBUTION	Area is clear	
E. SEWER DISTRIBUTION	Area is clear	
F. ENVIRONMENTAL	N/A	
G. PAVEMENTS/ GROUNDS	Barricade and clearly mark with warning lights	
H. FIRE PROTECTION	N/A	
I. ZONE _____	N/A	
J. OTHER *(Specify)*	N/A	
9. SECURITY POLICE	Will check barricades and lights at night	
10. SAFETY	Underground lines in the area. Area has been staked.	
11. COMMUNICATIONS	N/A	
12. BASE OPERATIONS	N/A	
13. CABLE TV	N/A	
14. COMMERCIAL UTILITY COMPANY ☐ TELEPHONE ☐ GAS ☐ ELECTRIC	N/A	

15. OTHER *(Specify)* _____

16. REQUESTED CLEARANCE ☐ APPROVED ☐ DISAPPROVED

17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER *(Chief of Operations Flight or Chief of Engineering Flight)*	17a. DATE SIGNED

AF FORM 103, 19940801 *(EF-V3)* PREVIOUS EDITIONS ARE OBSOLETE.

INSTRUCTIONS

The BCE work clearance request is used for any work (contract or in-house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance request must be reprocessed.

18. REMARKS. *(This section must describe specific precautionary measure to be taken before and during work accomplishment. Specific comments concerning the approved method of excavation, hand or powered equipment, should be included.)*

AF FORM 103, 19940801 ***(EF-V3) (REVERSE)***

Attachment 32

DD FORM 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Form Approved OMB No. 0704-0188 — PAGE 1 OF 1 PAGES

Public reporting Burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington DC 20503

1. FROM (Installation/ Activity/ Service and Zip code)	2. OPERATING UNIT	3 DISTRICT CODE	4 OPERATING AGENCY	5 DATE	6 JOB NUMBER	7 SERIAL NUMBER	8 CONTRACT NUMBER
38 LS/LGSL 4004 Hilltop Rd Tinker AFB OK 73145-2713	AFMC	N/A	USAF	6 Sep 94	1233A4DO	N/A	N/A

9. TO (Installation/ Activity/ Service and Zip code)	10 OPERATING UNIT	11 DISTRICT CODE	12 OPERATING AGENCY	13 ACCOUNTING NUMBER	14 ACCOUNTABLE OFFICE NUMBER	15. TYPE OF TRANSACTION		16 PROJECT NUMBER
3202 ABG Civil Engineering Eglin AFB FL 32542	AFMC	N/A	USAF			A ☒ NEW CONSTR. ☐ EXISTING FAC ☐ CAPITAL IMP ☐ OTHER (Specify)	B ☐ BENFO ☐ PHYSICAL COM ☐ FINAN COM ☐ OTHER (Specify)	N/A

ITEM NO 17	CATEGORY CODE 18	FACILITY (Category description) 19	NO OF UNITS 20	TYPE 21	UNIT OF MEAS 22	TOTAL QUANTITY 23	COST 24	DRAWING NUMBERS 25	REMARKS 26
01	132-134	Pole, Telephone 90 ft, class 1	01	P	Ea	01	$829.32	SHCZB04002S#000 Sh 1.	
		NOTE 1: Pole erected by AFCC(EI) military personnel.							
		NOTE 2: Costs a. pole b. labor est				$1000.00	$829.32		

27 STATEMENT OF COMPLETION: The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.

TRANSFERRED BY (Signature)	DATE	28 ACCEPTED BY (Signature)	DATE
TITLE (Area Engr / Base Engr / OPMO)	15 May 95	TITLE (Post Engr / Base Civ Engr / Navy Rep)	15 May 95
		29 PROPERTY VOUCHER NUMBER	91241

DD Form 1354, FEB 90 — Previous editions are obsolete. — 412016

INSTRUCTIONS FOR COMPLETING, COORDINATING AND DISTRIBUTING DD FORM 1354

A32.1. Completion:

A32.1.1. Blocks 1, 2, 4, 5, 6, 17, 20, and 22 through 27 will be filled out by team chief with help from BCE/DEER/.

A32.1.2. Blocks 3, 7, 8, 9, 10-16, 18, 19, 21, 28, and 29 will be left blank.

A32.1.3. Notes 1 and 2 will be completed by team chief. *NOTES:*

Note 1 will always be "(Nomenclature of item)" installed by EI personnel.

Note 2 cost will be computed as:

(a) Item cost from shipping document or 38 EIW 23-series regulations.

(b) Labor cost estimation will be computed by total man-hours used to install the item, times the installation cost per hour. Obtain this cost from BCE/DEER.

A32.1.4. Block 30 and AFI 31 will be completed by BCE for transfer and acceptance of Military of Real Properties.

A32.2. Coordination. In most cases, only the coordination of the BCE and the operating unit is necessary; however, in the case of missile, radar warning, and communications sites, the Site Activation Task Force (SATAF) commander may sign the DD Form 1354.

A32.3. Distribution. The signed and coordinated forms will be distributed as follows:

A32.3.1. Original copy to the supporting/host BCE.

A32.3.2. One copy attached to AF Form 1261.

A32.3.3. One copy filed in the Project Folder.

Attachment 33

AFMC FORM 153, PRE-IMPLEMENTATION SITE SURVEY (PSS) CHECKLIST

PRE-IMPLEMENTATION SITE SURVEY (PSS) CHECKLIST		PSS COMPLETION
PROJECT DESIGNATOR *(Four Elements)*	CUSTOMER UNIT DESIGNATION	
BASE	LOCATION	

SECTION I **HOST/BASE CUSTOMER SUPPORT**

NOTE: REVIEW PROJECT SUPPORT AGREEMENT FOR SUPPORT REQUIREMENTS OF THE HOST/BASE CUSTOMER. VERIFY ADEQUACY OF EACH REQUIREMENT AND INDICATE YOUR FINDINGS BELOW.

	S	D	NA
1. MILITARY CONSTRUCTION PROGRAM *(Compare BOD and TSD)*			
2. SITING AND PROJECT INSTALLATION DATA			
3. CIVIL ENGINEERING SUPPORT REQUIREMENTS			
4. COMMUNICATIONS COMPUTERS SYSTEM SUPPORT REQUIREMENTS			
5. TRANSPORTATION			
6. HOUSING			
7. MESSING			
8. ADMIN AREA *(DSN, comuter/Network Access, Etc.)*			
9. SPECIAL EQUIPMENT *(Flat Bed, Trencher, etc.)*			
10. SECURE STORAGE AREA			
11. TEST EQUIPMENT *(Availability and Calibration Dates)*			
12. TECHNICAL DATA			
13. CUSTOMER FURNISHED MATERIEL *(Locally Available)*			
14. PACKING AND CRATING SERVICES			
15. BIO-ENGINEERING *(Asbestos/Manholes)*			

SECTION II **PROJECT MATERIEL**

NOTE: CONTACT PROJECT STORAGE MONITOR TO VERIFY ARRIVAL OF MATERIEL SHIPMENTS. IF MATERIEL SHIPMENTS CAN'T BE LOCATED, FOLLOW PROCEDURES IN AFMCI 33-104. PERFORM 100% INVENTORY OF AVAILABLE MATERIEL USING LOM, PACKING LIST AND MATERIEL.

	S	D	NA
1. INVENTORY			
2. SUBSTITUTION			
3. COMMAND ASSETS			
4. INITIAL SPARES SUPPORT LIST			
5. SHIPPING/HANDLING			
6. POTENTIAL REAL PROPERTY ITEMS IDENTIFIED			
7. OTHER PROJECT CONTAINERS			

SECTION III **HOST/BASE CUSTOMER REPRESENTATIVES**

GRADE	NAME *(Last, First and MI)*	FUNCTIONAL ADDRESS	PHONE NUMBER

SECTION III **GENERAL**

NOTE: ENSURE PROBLEMS ARE THOROUGHLY IDENTIFIED IN "REMARKS" ON REVERSE SIDE.	YES	NO	N/A
1. ARE ALL PROJECT TESTING PROVISIONS IDENTIFIED			
2. IS BASE CIVIL ENGINEERING WORK CLEARANCE REQUIRED			
3. ARE RESTRICTED AREA BADGES REQUIRED			
4. HAS CUSTOMER ACQUIRED DISPOSITION INSTRUCTIONS FOR REMOVED EQUIPMENT			
5. CAN THE JOB PROCEED ON SCHEDULE			

AFMC FORM 153, 20010312 ***(EF-V1)*** **PREVIOUS EDITION IS OBSOLETE**

SECTION IV	REMARKS

SURVEY TEAM CHIEF	
NAME, GRADE, UNIT *(Printed/Typed)*	SIGNATURE

AFMC FORM 153, 20000619 *(Reverse)*

INSTRUCTIONS FOR COMPLETING PRE-IMPLEMENTATION CHECKLIST

A33.1. Purpose of this form is to provide a method to verify that all matters related to the installation of a project are complete prior to team departure.

A33.2. This form will be used as a basic checklist/guide for documenting Pre- Implementation Site Survey (PSS) implementation assessment findings. Ensure the following information, as a minimum is addressed: problem areas; recommended corrective actions; impact if the problem is not corrected; change in any funding issue and job hours.

A33.2.1. HEADING BLOCKS - Enter the completion date, project designator, customer designation, host base name, and job location.

A33.2.2 SECTION I and SECTION II - Check appropriate block, and write a word picture about conditions, if required. Blocks: “S” - Satisfactory; “D” - Deficient; “NA” - Not Applicable.

A33.2.3. SECTION III - Enter rank, name, functional address symbol, and phone number of host base/ customer representatives contacted during PSS survey.

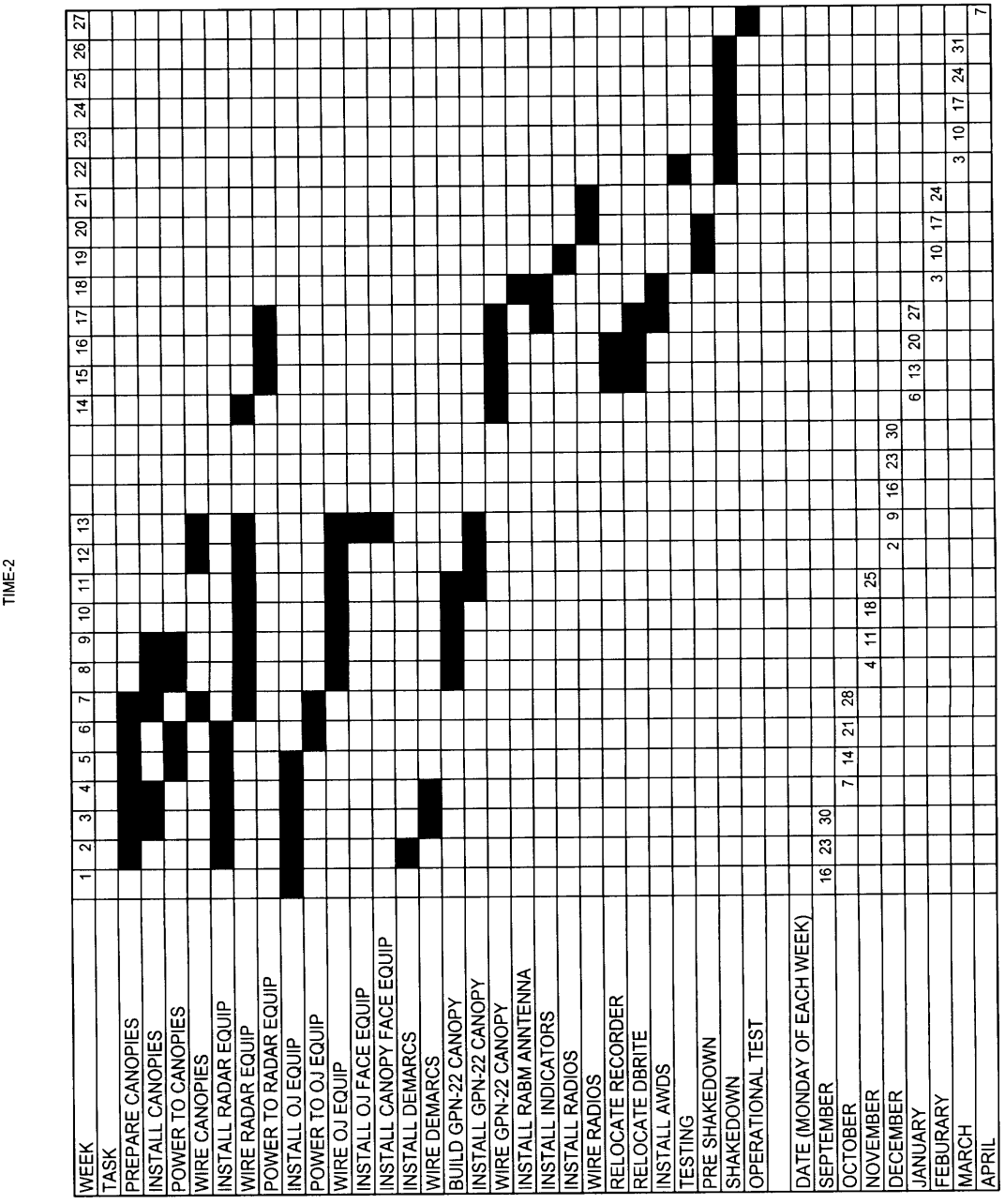
A33.2.4. SECTION IV - Check appropriate block and enter in remarks, pertinent information about each area. Identify individuals with whom coordination actions were accomplished and an explanation of agreements obtained.

A33.2.5. SECTION V - Use this section to comment about conditions which need clarification. For sections I, II, and IV items marked deficient, thoroughly explain how the deficiency will impact job start/ progress, and what action was taken by the team chief to correct the deficiencies. Sections I, II, and IV items marked satisfactory may also have comments for clarity, even if corrective action is not required. Items marked N/A do not require comments. If additional space is needed, continue on plain bond paper.

A33.2.6. The survey team chief will enter his name, grade, and unit in SURVEY TEAM CHIEF blocks and sign, certifying completion of the survey.

Attachment 34

PROJECT TIMELINE



Attachment 35

EXCERPTS FROM AFI 21-116 (EI PROJECT/TEAM SUPPORT)

CHAPTER 3. CHIEF OF MAINTENANCE/CHIEF OF SYSTEMS (COM/COS)

3.2.14. Ensure EI project packages are reviewed for installability and continued validity of the requirements. This includes providing tools, test equipment, and support to EI teams as required by the project support agreements (PSAs) or when needed to preclude work stoppages.

3.2.15. Ensure Maintenance Support participates acceptance and operational testing of new installations.

3.2.16. Ensure TCTO modifications kits are supplied to EI team chiefs for compliance during installation of new systems.

3.2.17. Ensure the EI customer satisfaction questionnaire is completed within 45 days after EI teams complete work. Provide meaningful comments and specific examples when dissatisfied with the service provided. Send questionnaire to the QA office of the EI teams parent unit.

CHAPTER 6. WORK CENTER SUPERVISOR RESPONSIBILITIES

6.12. Work Center Logistics Support. Ensure work center logistics support management responsibilities and *work center project coordinator* duties are accomplished. (Para 6.12.7)

6.12.1. Appoint a work center project coordinator for each EI project, contractor projector, or self-help project to ensure project coordinator duties are accomplished.

6.12.2. Assign one or more technicians to work with EI project and maintenance assistance teams. The COM/COSF may waive this requirement, on a case-by-case basis. Assigned technicians can receive valuable training from the team and should be used as the trainer for other work center technicians after the team departs.

6.12.7. Work Center Project Coordinators. Project coordinators act as the work center focal point for all matters concerning the assigned project. Project coordinators ensure projects are accomplished with minimum difficulty and the work center can support systems or equipment programmed for installation or major modification. Project coordinators:

6.12.7.1. Work closely with the unit P&I office, EI engineers, and EI teams.

6.12.7.2. Participate in site surveys and provide technical advice to the EI team, work center supervisor, COM/COSF, and the P&I office.

6.12.7.3. Coordinate with other work center project coordinators to identify and resolve conflicts (such as storage space, power requirements, or programmed equipment locations).

6.12.7.4. Provide continuity of logistics support preparations for the project.

6.12.7.5. Review EI project packages and amendments. Initiate engineering change requests with an AF Form 1146, Engineering Change Request/authorization, according to AFI 33-104, Base Level Planning and Implementation for necessary changes to the project for deficiencies noted in the project package. Identify changes and deficiencies before the installation begins, to ensure timely project completion and to prevent delays and work stoppages during installation. Use attachment 4 and AFMQCC 200-3 as a guide to conduct these reviews.

6.12.7.9. Request technicians be appointed to work with the EI team and monitor progress of the project.

Attachment 36

LETTER OF CUSTODIAL AGREEMENT

Date

MEMORANDUM FOR WHCA/PMD/WASD

FROM: 738 EIS/ISM

SUBJECT: Letter of Custodial Agreement

1. This letter transfers custodial responsibility for Win # 0180A6DO-WHCA-3508-K, Installation of Network Encryption from the 738 EIS team to WHCA during the team's absence. By signing the endorsement, WHCA is accepting responsibility to maintain custodial status of project installation and materiels until EI team's return and agreeing to the terms of this agreement. The team is scheduled to depart for Keesler AFB MS 01 December 1998 with an estimated team return date of 13 Jan 98.

2. Current status of the installation, materiels inventory, materiel re-supply actions, travel box fabrication requirements and WHCA action requests are provided via attachments to this document.

3. Request WHCA review attachment 5, WHCA Action Request during the team's absence and complete as many of the requests as possible, and have on-hand when team returns. Team return may be delayed due to inaction toward the resolve of attachment 5 or delays in the resupply of materiel.

4. Questions, comments, or request for action concerning this installation during the team's absence should be addressed to MSgt Thomas or myself at 738 EIS/ISM, DSN 597-4601 or (228) 377-4601.

Team Chief Signature Block

Attachments:

1. Installation Project Status
2. Project Materiel Inventory
3. Travel Box Materiel and Equipment List
4. Materiel Supply Request
5. Action Request Letter

1st Ind, WHCA PMD/WASD

MEMORANDUM FOR 738 EIS/ISM

We acknowledge the custodial transfer for project installation and materiel status. We agree to review attachment 5 of this document and work toward completion of the action request items.

WHCA/PMD Project Officer

WHCA/WASD Network Engineer

Attachment 37

AFMC FORM 154, EI QUALITY ASSURANCE EVALUATION REPORT

EI QUALITY ASSURANCE EVALUATION RECORD

1. WIN	2. WORK LOCATION	3. DATE

4. ITEM EVALUATED	OBS	NOT OBS	DEF	COR	N/A
SECTION I ENGINEERING					
A. PROJECT PACKAGE RECEIVED					
B. PUBLICATION IDENTIFIED					
C. PROJECT SUPPORT AGREEMENT (PSA)					
D. LIST OF MATERIAL (LOM)					
E. TASK INSTRUCTIONS (TI)					
F. QUALITY ASSURANCE PROVISIONS (Testing)					
G. DRAWINGS AND SCHEMATICS					
SECTION II PROJECT ACCOMPLISHMENT					
A. BCE SUPPORT REQUIREMENT					
B. C-CS SUPPORT REQUIREMENT					
C. MATERIEL PROVIDED/SUBSTITUTED					
SECTION III EI TEAM CHIEF					
A. PRE-INSTALLATION SITE SURVEY (PSS)					
B. PUBLICATIONS AVAILABLE/COMPLETE					
C. COMPLIANCE WITH TASK INSTRUCTIONS					
D. C-C SYSTEMS INSTALLATION RECORDS UPDATED (CSIR)					
E. QA TESTS COMPLETED					
F. PROJECT DOCUMENTATION					
G. DEFICIENCY REPORTING					
H. TRAINING DOCUMENTATION					
I. COMPLIANCE WITH AFMCI 33-104					

4. ITEM EVALUATED	OBS	NOT OBS	DEF	COR	N/A
SECTION IV WORKMANSHIP					
A. ANTENNA/POLE/TOWER					
B. GUYS/ANCHORS/HARDWARE					
C. EQUIPMENT ASSEMBLY/ANCHORING					
D. CONDUITS/DUCTS/TROUGHS/LADDERS					
E. EQUIPMENT GROUND/LIGHTNING PROTECTION					
F. MARKING					
G. FANNING/FORMING					
H. CABLE INSTALLATION/SPLICING					
I. SOLDERING					
J. WIRE/CABLE TERMINATION					
K. CORROSION CONTROL					
L. EQUIPMENT CONDITION					
M. OTHER					
SECTION V EI UNIT SUPPORT					
A. TEST EQUIPMENT					
B. TEAM TOOLS					
C. VEHICLES AND ANCILLARY EQUIPMENT					
D. TECHNICAL ORDERS/PUBLICATIONS					
E. OTHER					
SECTION VI SAFETY					
COMPLIANCE WITH SAFETY DIRECTIVES					

TYPE OF EVALUATION		
5. FINAL	IN-PROGRESS	AFTER THE FACT

6. TEAM CHIEF EVALUATION		
INITIAL	RECERTIFICATION	SPECIAL

7. UNIT COORDINATION *(Order determined by Chief of QA)*

DATE	OPR	SUSPENSE	INITIALS

8. CERTIFICATION

TEAM CHIEF *(Name, Grade, Organization)*	SIGNATURE
EVALUATOR *(Name, Grade, Organization)*	SIGNATURE

AFMC FORM 154, 20010205 (EF-V1) **PREVIOUS EDITION IS OBSOLETE**

INSTRUCTIONS FOR COMPLETING EI QUALITY ASSURANCE REPORT

A37.1. Purpose of this form is to document the quality of all facets of the engineering and installation effort.

A37.2. Introduction: The following guide will be used when performing a "self-evaluation." The intent of performing a self-evaluation is to ensure each customer receives a total quality product. Although Sections III and IV are the only areas pertaining to the team chief, the remaining sections should be looked at to ensure problem areas are identified and corrected by the appropriate activities. The team chief must be able to explain the deficiencies found, and what corrective actions were taken. Documenting deficiencies and the corrective action(s) ensures in continuity of the project, and serve as a management tool to ensure problem areas are resolved. This form is one product a team chief can use as a guide when performing a self evaluation. Other products such as the QA Reference Guide or locally developed checklist may be used.

Block 1, PROJECT NUMBER. Enter the project designator (all four elements and the project title i.e., 0033A4K0-2204-R, AN/GRC-171 Installation).

Block 2, Work Location. Enter the base or site and state or country. If the location is classified, enter "Classified." **Note:** If the location in and of itself is not classified but becomes classified dependent upon other factors, state the location as classified under certain conditions.

Block 3, Date. Enter the calendar day, month, and year the self-evaluation was completed.

Block 4, Item Evaluated. Use checkmarks or Xs (herein referred to as X) as follows:

a. Enter an X in the "OBS" column for areas observed.

b. Enter a number in the "DEF" column corresponding to the number of deficiencies identified.

c. Enter a number in the "COR" column corresponding to the number of deficiencies corrected on the spot.

d. Enter an X in the "N/A" column if an item/area did not pertain to the job.

e. If an item on the AFMC Form 154 is appropriate to the work requirement but was not observed by the evaluator, enter an X in the "NOT OBS" column (i.e., "QA Tests Completed" may not be observed during an in-progress QA evaluation).

f. The following is the criteria used for Sections 1 through 6 on the form:

A37.3. Section I - Engineering - This section covers the problems directly or indirectly attributed to engineering. If engineering caused or could have caused a problem with project implementation, then a deficiency will be annotated in this area. If a deficiency was previously identified during a project review but no action, or insufficient action was taken, then annotate a deficiency in the appropriate area under Section I.

A37.3.1. Section I, Item A - Project Package Received - This area covers problems with the received project package caused by engineering. Problems related to an insufficient number of project packages should be addressed in this area.

A37.3.2, Section I, Item B - Publications Identified - All technical publications needed to accomplish the work will be identified in the project package. Also, deficiencies with technical data that should be included in the project package by the engineer (e.g., commercial off-the-shelf manuals, company instal-

lation practices, catalogs, and brochures that are not available through normal government sources) should be addressed in this area.

A37.3.3. Section I, Item C - Project Support Agreement (PSA) - This area covers the adequacy of support (to include allied support) identified by engineering to successfully complete the job.

A37.3.4. Section I, Item D - List of Materiel (LOM) - This area covers problems caused by engineering with the LOM, such as insufficient quantities and improper types of materiel called out, etc. This area should also be used to identify any problems with amendments to the LOM.

A37.3.5. Section I, Item E - Task Instructions (TI) - This area covers the adequacy of detailed information in the TI, Project Bulletin or ECR/A to successfully complete the job WITHOUT further clarification from engineering. Even if "normal" team chief/engineer coordination corrects a problem, a deficiency will be annotated in this area.

A37.3.6. Section I, Item F - Quality Assurance Provisions (Testing) - This area covers the adequacy of the test and acceptance portion of the TI to successfully and completely check out the installation. The test plan will be current and meet TO specifications.

A37.3.7. Section I, Item G - Drawings/Schematics - This area covers the adequacy of the drawings/schematics (provided or not provided) to successfully complete the job without further clarification from engineering.

A37.4. Section II - Project Accomplishment - This section is used to identify deficiencies with Base Civil Engineering (BCE) or the local communication agency for failure to comply with requirements addressed in the PSA and problems associated with project materiels.

A37.4.1. Section II, Item A - BCE Support Requirement - This area covers the adequacy of support provided by the host BCE as addressed in the PSA. It includes such items as site/building preparation prior to EI team arrival.

A37.4.2. Section II, Item B - CII Support Requirement - This area covers the adequacy of support provided by the host base communication agency as addressed in the PSA. It includes such items as telecommunications service requests (TSR), availability of COMSEC equipment for installation, reserved cable pairs, test equipment, etc.

A37.4.3. Section II, Item C - Materiel Provided/Substituted - This area covers problems with project materiel. If applicable, identify the report control number (RCN) for the type deficiency report submitted.

A37.5. Section III - EI Team Chief - This section covers the team chief's administrative responsibilities.

A37.5.1. Section III, Item A - Pre-Installation Site Survey (PSS) - This area covers the adequacy of the team chief's Pre-Implementation Site Survey.

A37.5.2. Section III, Item B - Publications Available/Complete - All required publications must be current and available, either in the team chief's possession or readily accessible at the work area.

A37.5.3. Section III, Item C - Compliance with Task Instructions - This area covers the team chief's full compliance with the TI including drawings, amendments, and engineering change request/authorizations (ECR/A). Failure to obtain ECR/A action is just as important to check as failure to follow engineering provided ECR/A's.

A37.5.4. Section III, Item D - C4 Systems Installation Records (CSIR) Updated - This area covers the team chief's proper and timely update of project drawings.

A37.5.5. Section III, Item E - QA Tests Completed - This area covers the team chief's full compliance with the testing portion of the project to include pre-testing at the beginning of the installation, and pre-shakedown, shakedown and operational testing at job completion, and documentation of test results.

A37.5.6. Section III, Item F - Project Documentation - This area covers all project documentation the team chief is required to perform during the course of the installation. Documentation related to the PSS, deficiency reporting, testing, and training should not be addressed under this area.

A37.5.7. Section III, Item G - Deficiency Reporting - This area covers the team chief identifying and properly reporting deficiencies when applicable.

A37.5.8. An AFTO Form 22 is required for each omission or error identified in technical publications (TO 00-5-1).

A37.5.9. A Product Quality Deficiency Report (PQDR) is required whenever equipment operation or structures are unsafe and if not corrected could cause major loss or damage to equipment, severe injury or death to include a deficiency attributable to errors in workmanship, or non-conformance to specifications, drawings, standards, or other technical requirements that do not meet the requirements for an PQDR (TO 00-35D-54).

A37.5.10. Section III, Item H - Training Documentation - This area covers proper documentation of training for team members.

A37.5.11. Section III, Item I - Compliance with this chapter - This area covers team compliance not covered in other areas under Section III.

A37.6. Section IV - Workmanship - All the areas in Section IV cover team workmanship in accordance with SIPTOs or other applicable directives.

A37.6.1. Section IV, Item A - Antenna/Pole/Tower - This area covers ALL antenna, pole, and tower installation deficiencies.

A37.6.2. Section IV, Item B - Guys/Anchors/Hardware - This area covers guy, anchor, and hardware installation deficiencies.

A37.6.3. Section IV, Item C - Equipment Assembly/Anchoring - This area covers ALL assembly and anchoring type deficiencies associated with equipment.

A37.6.4. Section IV, Item D - Conduits/Ducts/Troughs/Ladders - This area covers ALL assembly/anchoring type deficiencies associated with conduits, ducts, troughs and cable ladders.

A37.6.5. Section IV, Item E - Equipment Ground/Lightning Protection - This area covers ALL termination and assembly/anchoring type deficiencies associated with ground/lightning protection.

A37.6.6. Section IV, Item F - Marking - This area covers ALL marking type deficiencies.

A48,6,7. Section IV, Item G - Fanning/Forming - This area covers ALL fanning, forming, and lacing deficiencies.

A37.6.8. Section IV, Item H - Cable Installation/Splicing - This area covers ALL cable installation and splicing type deficiencies.

A37.6.9. Section IV, Item I - Soldering - This area covers ALL soldering type deficiencies.

A37.6.10. Section IV, Item J - Wire/Cable Termination - This area covers ALL wire and cable wrapping/termination type deficiencies.

A37.6.11. Section IV, Item K - Corrosion Control - This area covers ALL corrosion control type deficiencies.

A37.6.12. Section IV, Item L - Equipment Condition - This area covers general equipment condition deficiencies (due to team workmanship) not covered in other areas.

A37.6.13. Section IV, Item M - Other - This area is for all team workmanship areas not covered under Section IV.

A37.7. Section V - EI Unit Support - This area covers the support that the EI parent unit provides in the form of special tools, test equipment, vehicles and TOs/Pubs, so that the team can successfully complete its work. This includes calibration of the test equipment while in the possession of the support branch. **Note:** If a deficiency is not due to unit support, DO NOT annotate the deficiency under this section. Consider annotating the deficiency under Section I, II, or III, whichever is appropriate.

A37.7.1. Section V, Item A - Test Equipment - This area covers the EI unit making required testing devices available or accessible to the team, ensuring that any test device signed out by the team is calibrated, and that all accessories required for TO completeness are provided.

A37.7.2. Section V, Item B - Team Tools - This area covers the EI unit making required tools available, safe, and accessible to the teams.

A37.7.3. Section V, Item C - Vehicles and Ancillary Equipment - This area covers the unit's responsibility to ensure safe vehicles and ancillary equipment are available or accessible to the team.

A37.7.4. Section V, Item D - Tech Orders/Pubs - This area covers the unit making the required technical orders and publications available or accessible to the team and ensuring they are current with all changes and updates.

A37.7.5. Section V, Item E - This area covers the customer ensuring that materiel items have been ordered and are available to the team.

A37.8. Section VI - Safety - Compliance with Safety Directives - This area covers team compliance with safety directives.

Block 5, Type of Evaluation. The evaluator should mark the block corresponding to the type of evaluation performed.

Block 6, Team Chief Evaluation. Mark the block corresponding to the type of evaluation being performed.

Block 7, Unit Coordination. N/A, unless otherwise instructed by the workcenter supervisor.

Block 8, Certification. Enter the team chief's name, grade, parent organization, and office symbol in the "Team Chief" block.

Attachment 38

AF FORM 1261, CI SYSTEMS ACCEPTANCE CERTIFICATE

COMMUNICATIONS AND INFORMATION SYSTEMS ACCEPTANCE CERTIFICATE

1. DESCRIPTIVE TITLE OF SYSTEM

2. BASE	3. BUILDING AND ROOM NUMBER	4. USER

5. DOCUMENT AUTHORIZING SYSTEM

6. LIST OF RELATED PROJECTS/CONTRACTS

7. MAJOR ITEMS OF EQUIPMENT/SOFTWARE INSTALLED, REMOVED OR TRANSFERRED:

NSN/PN A	NOMENCLATURE B	ASC C	QTY D	DETAIL DOCUMENT NUMBER E	I/R/T F

8. NARRATIVE PROJECT SUMMARY

9. INSPECTION AND TRANSFER SUMMARY (Enter "X" or "NA" on each line, A through I.)

	A. INSTALLATION ACTIVITY IS RELIEVED OF RESPONSIBILITY.
	B. INSTALLATION TESTED PER TEST PLAN CRITERIA. FLIGHT CHECK MADE, IF APPLICABLE. DATA ATTACHED.
	C. REPORT OF MEASURED X-RADIATION IS ATTACHED.
	D. RF INTENSITY PLOT IS ATTACHED.
	E. EQUIPMENT ACCOUNTABILITY WAS TRANSFERRED.
	F. COMSEC ACCOUNT NUMBER IS:
	G. REAL PROPERTY WAS TRANSFERRED.
	H. AS-INSTALLED DRAWINGS WERE PROVIDED TO THE BASE CSO.
	I. ADDITIONAL REMARKS ARE ATTACHED.

	J. DESCRIPTION OF MINOR EXCEPTIONS.	RESPONSIBLE ACTIVITY	FORECAST DATE OF CORRECTION	DATE CORRECTED

AF FORM 1261, 19990901 *(EF-V1)* PREVIOUS EDITIONS ARE OBSOLETE.

ACCEPTANCE CERTIFICATE

10. An inspection and operational test was conducted. Inspection results are in Item 9. The system is accepted as installed, as planned, and in accordance with established standards. It performs according to established criteria, and to the satisfaction of the undersigned.

FUNCTION	ORGANIZATION	TYPED NAME, GRADE AND TITLE	SIGNATURE	DATE
A. INSTALLATION ACTIVITY				
B. OPERATING ACTIVITY				
C. MAINTAINING ACTIVITY				
D. INSPECTION ACTIVITY				
E. BASE SUPPLY				
F.				
G.				
H.				

11. CERTIFICATION: All exceptions have been corrected. All operating and maintenance personnel, spare parts, test equipment, tools, expendable operating supplies, technical data, and other logistical support deemed necessary to meet the operational mission of the system are available.

FUNCTION	ORGANIZATION	TYPED NAME, GRADE AND TITLE	SIGNATURE	DATE
A. BASE CSO				
B. USER				

ADDITIONAL REMARKS

AF FORM 1261, 19990901 *(EF-V1)*

Attachment 39

AFMC FORM 155, POST DEPLOYMENT CHECKLIST

ENGINEERING INSTALLATION POST DEPLOYMENT CHECKLIST		DATE
PROJECT DESIGNATOR	TEAM CHIEF'S NAME	
CUSTOMER UNIT/BASE	WORKCENTER SUPERVISOR'S NAME	
SECTION I AT TDY LOCATION		DATE ACCOMPLISHED AND DINITIALS
1. ENSURE ALL FORMS/DOCUMENTS ARE COMPLETED, SIGNED AND DISTRIBUTED		
A. ONE COMPLETE SET OF AS-INSTALLED DRAWINGS TO THE CUSOTMER AND ONE TO DRAFTING SVCS		
B. TRANSFER AND ACCEPTANCE OF REAL PROPERTY ACCOMPLISHED ON DD FORM 1354		
C. AF FORM 1261 WITH ALL ATTACHMENTS DISTRIBUTED IAW AFMCI 33-104		
2. EXCESS PROJECT MATERIEL DISPOSED OF		
3. LOCAL SUPPLY ACCOUNT CLEARED		
4. WORK AREA CLEANED		
5. BORROWED VEHICLES CLEANED AND TURNED IN		
6. ENSURE CUSTOMER REPRESENTATIVES ARE OUT BRIEFED		
7. ENSURE		
A. BORROWED EQUIPMENT IS RETURNED AND AF FORMS 1297 ARE CLEARED		
B. TOOLS INVENTORIED AND PACKED FOR SHIPMENT		
C. EQUIPMENT PREPARED FOR SHIPMENT		
D. TEAM MEMBERS CLEAR BILLETING *(Pickup DD Form 1351-5, if applicable)*		
E. TEAM MEMBERS PREPARED FOR DEPARTURE		
8. NOTIFY SUPERVISOR OF TRAVEL ITINERARY		
9. INFORM 24-HOUR CONTACT POINT OF DEPARTURE TIME		
10. OTHER *(Local Requirements)*		
SECTION II AT HOME UNIT		
1. ENSURE TEAM-IN-PROCESSES IAW LOCAL PROCEDURES		
2. IN BRIEF WORK CENTER SUPERVISOR		
3. ENSURE TEAM MEMBERS PROCESS TRAVEL VOUCHERS		
4, CLEAN AND TURN-IN SPECIAL TOOLS, TEST EQUIPMENT, AND VEHICLES		
5. PROCESS THROUGH		
A. SAFETY OFFICE		
B. TRAINING OFFICE		
C. TECHNICAL ORDE/PUBLICATIONS OFFICE		
D. ORDERLY ROOM		
E. OPERATIONS FLIGHT (Team Chief Only)		
6, TURN IN TEAM CHIEF ADMINSTRATIVE KIT		
7, PROCESS FINAL PROJECT FOLDER AND APPLICABLE DOCUMENTS IAW LOCAL PROCEDURES		
8. TURN IN LETTERS OF EVALATION *(LOEs)*		
9. OTHER *(Local Requirements)*		
ALL ITEMS HAVE BEEN ACCOMPLISHED ON THE DATES INDICATED		
TEAM CHIEF NAME *(Type/Print)*	TEAM CHIEF SIGNATURE	DATE

AFMC FORM 155, 20010205 (EF-V1)

INSTRUCTIONS FOR COMPLETING EI TEAM POST-DEPLOYMENT

A39.1. Purpose of this form is to ensure that all required action are accomplished at the TDY location and upon return to home station are documented.

A39.2. Date: Date post deployment starts at TDY location.

A39.3. Project Designator: Include all four elements.

A39.4. Team Chief's name: Self explanatory.

A39.5. Customer unit/base: Self explanatory.

A39.6. Systems Installation Flight Supervisor's name: Self explanatory.

A39.7. Section I and II: Team chief will enter the date and his initials as each of the responsibilities are completed. Enter N/A if an area is not applicable. After completion, the team chief dates and signs the form and provides it to the systems installation flight supervisor for review/filing. *NOTE*: Units may use the reverse side to include local requirements.

Attachment 40

INSTRUCTIONS FOR MEMORANDUM TO TRANSMIT DRAWINGS (SEE AFMAN 37-126)

(Use the following memorandum example to prepare CSIR transmittal letter to the CSIR manager.)

MEMORANDUM FOR BASE CSIR MANAGER (unit and office symbol) (date)

FROM: (team chief name, rank, unit address)

SUBJECT: Transmittal of Updated CSIRs, (insert project number)

1. IAW AFI 21-404, the following project drawings associated with subject project are forwarded for your action.

a. Drawings with changes: (list all drawings by drawing number that were changed or marked in any way)

b. Drawings without changes: (list all drawings used to implement the project by drawing number that were not changed or marked in any way)

c. Drawings with changes pending due to project exceptions as listed on AF Form 1261: (list any drawings requiring further update upon completion of exceptions)

2. Request you acknowledge receipt by signing 1st endorsement below.

(team chief signature block)

1st Ind, CSIR Manager (date)

Received 2 copies of all CSIRs listed above.

(base CSIR manager signature block)

Note: file endorsed copy of letter in project folder)

Attachment 41

AFMC FORM 160, TRAINING EFFECTIVENESS ASSESSMENT

TRAINING EFFECTIVENESS ASSESSMENT (TEA)

NAME	OFFICE SYMBOL	AFSC	DUTY TITLE

TRAINING STATUS OF EVALUATEE: ☐ UPGRADE ☐ QUALIFICATION ☐ PROFICIENCY ☐ CROSS-UTILIZED ☐ OTHER

PERFORMANCE LOCATION OF TRAINING EFFECTIVENESS ASSESSMENT: ☐ DEPLOYED ☐ IN-STATION

TRAINER NAME *(Last name, First, MI, Rank, Office Symbol)*	CERTIFIER NAME *(Last name, First, MI, Rank, Office Symbol)*

TEAs are performed to determine an installer's technical proficiency and competence and to gauge the effectiveness of the training program. The Evaluator makes careful observations of three separage and distinct phases. Errors made in any of these phases must be considered when determining results. The decision to declare a performance error must be based on published standard installation practices, and/or T.O. procedures, manuals, or other references (IAW RRF Instruction, para 3.5).

CATEGORY I error is of critical importance and results in an unsatisfactory assessment for that particular task.

CATEGORY II errors are of major importance, but do not necessarily result in an unsatisfactory task performance. Three or more CAT II errors will result in an unsatisfactory performance.

CATEGORY III errors are of minor importance and lack the seriousness for a critical or major error. Although CAT III errors do not result in an unsatisfactory performance six or more Cat III errors will result in a Cat II error.

CFETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CATI	CATII	CATIII	
			PRE TASK				
			TASK				
			POST TASK				

COMMENTS

CFETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CATI	CATII	CATIII	
			PRE TASK				
			TASK				
			POST TASK				

COMMENTS

CFETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CATI	CATII	CATIII	
			PRE TASK				
			TASK				
			POST TASK				

COMMENTS

EVALUATOR'S NAME *(Last name, First, MI, Rank, Office Symbol)*	SIGNATURE	DATE

INSTALLATION OFFICER WILL DOCUMENT CORRECTIVE ACTIONS FOR UNSATISFACTORY TASK PERFORMANCE ON PLAIN BOND PAPER.

UNIT COORDINATION SECTION

OFFICE SYMBOL	SUSPENSE	INITIALS	DATE	OFFICE SYMBOL	SUSPENSE	INITIALS	DATE

AFMC FORM 160, 20000619 ***(EF-V1)***

Attachment 42

AFMC FORM 161, CUSTOMER SATISFACTION QUESTIONNAIRE

CUSTOMER SATISFACTION QUESTIONNAIRE (CSQ)

WORKLOAD IDENTIFICATION	PROJECT TITLE	DATE

PLEASE COMPLETE AND RETURN THIS CSQ TO OUR EI UNIT WITHIN 45 CALENDAR DAYS FROM PROJECT COMPLETION

TO	FROM *(EI Unit, POC, DSN)*

SECTION I **GENERAL INFORMATION AND INSTRUCTIONS**

This questionnaire is part of our Quality Assuance (QA) Program. Our goal is to provide you, the CUSTOMER, with the best products and services. Your comments allow us to evaluate and continually improve our process. Please provide a rating for each subject area in Section II. Specific comments are highly encouraged. If you need further assitance or would like a response to your comments, please contact our POC. Thank you.

SECTION II **SUBJECT AREAS AND RATING SCALES**

6 - VERY SATISFIED	4 - SOMEWHAT SATISFIED	2 - DISSATISFIED
5 - SATISFIED	3 - SOMEWHAT DISSATISFIED	1 - VERY DISSATISFIED

PLEASE WRITE THE CORRESPONDING RATING IN THE BLOCK FOLLOWING EACH SUBJECT AREA

A. PROJECT ENGINEER *(Project, Package, PSA, Site Survey, complete LOM)* COMMENTS	
B. PROJECT MANAGMENT *(Project coordination)* COMMENTS	
C. MATERIEL PROVIDED *(Complete, On-Time, Serviceability)* COMMENTS	
D. INSTALLATION TEAM *(Appearance, Conduct, Safety)* COMMENTS	
E. EI TEAM CHIEF *(Communication, Coordination, Team Leadership)* COMMENTS	
F. SYSTEM INSTALLATION *(Workmanship, Testing, Documentation)* COMMENTS	
G. PROJECT TIMELINESS *(Completed in time to satisfy your requirements)* COMMENTS	
H. ESTIMATED COST VERSUS FINAL COST *(Cost Overrun, Over Estimated)* COMMENTS	
I. PROJECT PERFORMANCE *(Operates and performs as designed)* COMMENTS	
J. WAS AN EI QUALITY ASSURANCE EVALUTION PERFORMED ☐ YES ☐ NO If Yes, please rate COMMENTS	
K. OVERALL RATING *(Consider all areas above)* COMMENTS	
L. WOULD YOU REQUEST OUR SERVICES AGAIN ☐ YES ☐ NO If Yes, please rate COMMENTS	

UNIT CC OR REPRESENTATIVE *(Last Name, First, MI)*	DATE

SIGNATURE

AFMC FORM 161, 20000619 *(EF-V1)*

Attachment 43

SAMPLE LETTER OF INTENT (LOI)

(UNIT LETTERHEAD)

MEMORANDUM FOR (BASE CSO) (DATE)

FROM: (Office symbol, include unit and unit address if unit letterhead is not available)

SUBJECT: Letter of Intent, (Project Number, Project Title, Location)

1. This is a Letter of Intent (LOI) between (EI Project engineer/team chief conducting the site survey) and (host base plans and Implementation activity at survey location) for project (number).

2. Purpose: (Briefly describe the installation, removal, or relocation and explain how the project will affect, improve, or change the customer's mission)

3. Equipment/System/Facilities to be installed/ removed or relocated: (List the major equipment to be installed, removed or relocated. Also, list any large or obstructing equipment or materiel. For example, a telephone pole or an equipment rack. Do not address hardware, cable, bits and pieces, etc.)

4. Siting for Equipment/System/Facilities.

a. Space to be reserved - (Specify exactly what area(s) need to be reserved for each component, equipment, system or facility.

b. Sketches/drawings: (Include a sketches or drawings showing the space(s) to be reserved).

5. Allied Support Requirements: (Address all allied support requirements to include civil engineering, architectural, mechanical, electrical, communications support, administrative support, etc.).

6. Rental Equipment: (If customer will provide rental equipment, specify what type t will be needed).

7. Test Equipment: (If customer will provide test equipment, specify what type will be needed)

8. Vehicle Support: (If customer will provide vehicle support, identify the vehicles required by the installation team. Use this paragraph also to address fuel and maintenance issues).

9. Other: (Address any other issues at the discretion of the team chief or at the request of the project manager/production controller or host base Plans and Implementation POC.

JOE EIT PERSON, TSGT, USAF

Project Engineer

Attachments: (as required)

1. Sketches-reserve space

2. Equipment layout

3. Site plan

(Signature of BCE or designate)
Organization/Office symbol
Telephone/E/mail

(Signature of BCE or designate)
Organization/Office symbol
Telephone/E-mail

NOTE: Leave room for other signatures as required